INSTALLATION RESTORATION PROGRAM

(1)

SOUTH DAKOTA AIR NATIONAL GUARD
JOE FOSS FIELD, SIOUX FALLS, SD

REMEDIAL INVESTIGATION

APPENDICES
VOLUME II
FINAL

HAZWRAP SUPPORT CONTRACTOR OFFICE
Oak Ridge, Tennessee 37831
Operated by MARTIN MARIETTA ENERGY SYSTEMS, INC.
For the U.S. DEPARTMENT OF ENERGY under contract DE-AC05-840R21400

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	September 1990	Final Remedial Investigation Report

4. TITLE AND SUBTITLE Remedial Investigation Report
South Dakota Air National Guard
Joe Foss Field, Sioux Falls, SD
Volume I, Volume II-Appendices Volume III-Appendices

5. FUNDING NUMBERS

6. AUTHOR(S)
N/A

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Science Applications International Corporation

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Hazardous Waste Remedial Actions Program
Oak Ridge, TN

Air National Guard Bureau
Andrews Air Force Base, Maryland 20331

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release;
distribution is unlimited

This report

South Dakota.

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

Describes the remedial actions on sites confirmed to contain hazardous wastes (SD) at Joe Foss Field, Sioux Falls, SD. The report describes the actions taken and the follow-up testing to insure no contamination exist that will endanger human health. The study was conducted under the Air National Guard's Installation Restoration Program.

(to pg. i)

14. SUBJECT TERMS	15. NUMBER OF PAGES
Installation Restoration Program Remedial Investigation Joe Foss Field, South Dakota Air National Guard	16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified			

AIR NATIONAL GUARD
INSTALLATION RESTORATION PROGRAM
REMEDIAL INVESTIGATION
114 TACTICAL FIGHTER GROUP
SOUTH DAKOTA AIR NATIONAL GUARD
JOSS FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

APPENDICES
VOLUME II

FINAL

Prepared for:

Air National Guard Support Center
Andrews Air Force Base, Maryland

Accesion For	
NTIS CRA&I	☒
DTIC TAB	☐
Unannounced	☐
Justification	
By	
Distribution /	
Availability Codes	
Dist	Avail and / or Special
A-1	

Prepared by:

Science Applications International Corporation

Submitted by:

Hazardous Waste Remedial Actions Program
Martin Marietta Energy Systems, Inc.

For the

U.S. Department of Energy
Under Contract No. DE-AC05-840R21400

August 1990

1-827-03-769-22

TABLE OF CONTENTS

(cont) → Partial contents of Volume II include Appendices E through I. Data tables of chemical contamination detected from field tests of soils and ground water sampling are presented. Quality control and public safety are discussed. ←

APPENDIX E:

CHEMICAL ANALYSES RESULTS

TABLE E-1. ENVIRONMENTAL TO QA/QC COMPARISON LIST FOR
SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

ENVIRONMENTAL SAMPLE	DATE	TIME	EQUIPMENT BLANK	TRIP BLANK	FIELD BLANK	DUPLICATE	ANALYSIS PARAMETERS								
							VOC	BNA	TPH	FULL MET	As,Pb	TOC	EP TOX	CEC	H2O QUAL
SITE 1															
Soil Boring Samples															
B-1-1-15	4/11	1330	EB-1	TB-1	FB-1		X	X	X		X	X	X	X	
B-1-1-25	4/11	1740	EB-1	TB-1	FB-1		X	X	X		X	X	X	X	
B-1-2-15	4/13	0745	EB-2	TB-2	FB-1		X	X	X		X	X	X	X	
B-1-2-25	4/13	0930	EB-2	TB-2	FB-1		X	X	X		X	X	X	X	
Monitoring Well Borehole Samples															
MW-1-5-15	4/16	0945	EB-6	TB-3	FB-1		X	X	X		X	X	X	X	
MW-1-5-20	4/16	1000	EB-6	TB-3	FB-1		X	X	X		X		X		
MW-1-6-15	4/16	1455	EB-6	TB-3	FB-1	MW-1-6-15DUP	X	X	X		X		X		
MW-1-6-20	4/16	1515	EB-6	TB-3	FB-1		X	X	X		X	X	X	X	
MW-1-7-15	4/17	0855	EB-7	TB-3	FB-1		X	X	X		X	X	X	X	
MW-1-7-20	4/17	0915	EB-7	TB-3	FB-1		X	X	X		X		X		
MW-1-8-15	4/17	1247	EB-7	TB-3	FB-1		X	X	X		X		X		
MW-1-8-20	4/17	1300	EB-7	TB-3	FB-1		X	X	X		X	X	X	X	
MW-1-9-15	4/25	0850	EB-8	TB-4	FB-2		X	X	X		X		X		
MW-1-9-20	4/25	0910	EB-8	TB-4	FB-2		X	X	X		X	X	X	X	
MW-1-10-15	4/26	0840	EB-9	TB-4	FB-2	MW-1-10-15DUP	X	X	X		X		X		
MW-1-10-20	4/26	0936	EB-9	TB-4	FB-2		X	X	X		X	X	X	X	
MW-1-11-15	4/26	1505	EB-9	TB-4	FB-2		X	X	X		X		X		
MW-1-11-20	4/26	1525	EB-9	TB-4	FB-2		X	X	X		X	X	X	X	
MW-1-12-15	4/27	1535	EB-10	TB-5	FB-2	MW-1-12-15DUP	X	X	X		X		X		
MW-1-12-20	4/27	1530	EB-10	TB-5	FB-2		X	X	X		X	X	X	X	
MW-1-13-15	4/27	0835	EB-10	TB-5	FB-2		X	X	X		X		X		
MW-1-13-20	4/27	0850	EB-10	TB-5	FB-2		X	X	X		X		X		
MW-1-14-15	4/28	1130	EB-11	TB-5	FB-2		X	X	X		X		X		
MW-1-14-20	4/28	1150	EB-11	TB-5	FB-2		X	X	X		X		X		

TABLE E-1. ENVIRONMENTAL TO QA/QC COMPARISON LIST FOR
SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (Continued)

ENVIRONMENTAL SAMPLE	DATE	TIME	EQUIPMENT BLANK	TRIP BLANK	FIELD BLANK	DUPLICATE	ANALYSIS PARAMETERS								
							VOC	BNA	TPH	FULL MET	As,Pb	TOC	EP TOX	CEC	H2O QUAL
Groundwater Samples															
First Round															
MW-1-1	4/30	1550	EB-12	TB-7	FB-2		X	X	X		X				X
MW-1-3	4/30	1730	EB-12	TB-7	FB-2		X	X	X		X				X
MW-1-4	4/30	1830	EB-12	TB-7	FB-2	MW-1-4DUP	X	X	X		X				
MW-1-5	4/30	1640	EB-12	TB-7	FB-2		X	X	X		X				
MW-1-6	4/30	1238	EB-12	TB-7	FB-2		X	X			X				
MW-1-7	4/30	1420	EB-12	TB-7	FB-2		X	X			X				
MW-1-8	4/30	1920	EB-12	TB-7	FB-2		X	X	X		X				
MW-1-9	4/30	0925	EB-12	TB-7	FB-2		X	X	X		X				
MW-1-10	4/30	1010	EB-12	TB-7	FB-2		X	X	X		X				
MW-1-11	4/30	1100	EB-12	TB-7	FB-2		X	X	X		X				
MW-1-12	4/30	2005	EB-12	TB-7	FB-2	MW-1-12DUP	X	X	X		X				
MW-1-13	4/30	1455	EB-12	TB-7	FB-2		X	X	X		X				
MW-1-14	4/30	1145	EB-12	TB-7	FB-2		X	X	X		X				
Second Round															
GW-1-1	7/25	0940	EB-15	TB-9	FB-3		X	X	X		X				
GW-1-3	7/25	1435	EB-15	TB-9	FB-3		X	X	X		X				
GW-1-4	7/25	1525	EB-15	TB-9	FB-3	MW-1-4DUP	X	X	X		X				
GW-1-5	7/25	1410	EB-15	TB-9	FB-3		X	X	X		X				
GW-1-6	7/25	1130	EB-15	TB-9	FB-3		X	X	X		X				
GW-1-7	7/25	1050	EB-15	TB-9	FB-3		X	X	X		X				
GW-1-8	7/25	1600	EB-15	TB-9	FB-3		X	X	X		X				
GW-1-10	7/25	0800	EB-15	TB-9	FB-3	MW-1-10DUP	X	X	X		X				
GW-1-11	7/25	0855	EB-15	TB-9	FB-3		X	X	X		X				
GW-1-12	7/25	1635	EB-15	TB-9	FB-3		X	X	X		X				
GW-1-13	7/25	1015	EB-15	TB-9	FB-3		X	X	X		X				
GW-1-14	7/25	1215	EB-15	TB-9	FB-3		X	X	X		X				

TABLE E-1. ENVIRONMENTAL TO QA/QC COMPARISON LIST FOR
SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (Continued)

	ENVIRONMENTAL SAMPLE	DATE	TIME	EQUIPMENT BLANK	TRIP BLANK	FIELD BLANK	DUPLICATE	ANALYSIS PARAMETERS								
								VOC	BNA	TPH	FULL MET	As,Pb	TOC	EP TOX	CEC	H2O QUAL
SITE 3																
	Soil Boring Samples															
	B3-1-0	4/14	1150	EB-4	TB-3	FB-1		X	X	X	X		X	X	X	
	B3-1-5	4/14	1212	EB-4	TB-3	FB-1		X	X	X	X			X		
	B3-2-0	4/14	1015	EB-4	TB-3	FB-1	B3-2-0DUP	X	X	X	X			X		
	B3-2-5	4/14	1048	EB-4	TB-3	FB-1		X	X	X	X		X	X	X	
	B3-3-0	4/14	1337	EB-4	TB-3	FB-1	B3-3-0DUP	X	X	X	X			X		
	B3-3-2.5	4/14	1350	EB-4	TB-3	FB-1		X	X	X	X		X	X	X	
	B3-4-0	4/15	0745	EB-5	TB-3	FB-1		X	X	X	X		X	X	X	
	B3-4-5	4/15	0810	EB-5	TB-3	FB-1		X	X	X	X			X		
	B3-5-0	4/15	0915	EB-5	TB-3	FB-1		X	X	X	X			X		
	B3-5-2.5	4/15	0925	EB-5	TB-3	FB-1		X	X	X	X		X	X	X	
	Groundwater Samples															
	MW-3-1	5/1	1637	EB-13	TB-8	FB-2		X	X	X	X					
	MW-3-2	5/1	1730	EB-13	TB-8	FB-2	MW-3-2DUP	X	X	X	X					
	MW-3-3	5/2	0940	EB-14	TB-8	FB-2		X	X	X	X					
	MW-3-4	5/2	1025	EB-14	TB-8	FB-2		X	X	X	X					
	MW-3-5	5/1	1520	EB-13	TB-8	FB-2		X	X	X	X					
BACKGROUND																
	Soil Boring Samples															
	BK-2-15	4/28	1620	EB-11	TB-5	FB-2		X	X	X	X		X	X	X	
	BK-2-20	4/28	1635	EB-11	TB-5	FB-2		X	X	X	X		X	X	X	
	BK-2-25	4/28	1650	EB-11	TB-5	FB-2		X	X	X	X		X	X	X	
	BK-3-0.5	4/28	1800	EB-11	TB-6	FB-2		X	X	X	X		X	X	X	
	BK-3-5	4/28	1820	EB-11	TB-6	FB-2		X	X	X	X		X	X	X	
	BK-3-20	4/28	1850	EB-11	TB-6	FB-2		X	X	X	X		X	X	X	

TABLE E-1. ENVIRONMENTAL TO QA/QC COMPARISON LIST FOR
SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (Continued)

ENVIRONMENTAL SAMPLE	DATE	TIME	EQUIPMENT BLANK	TRIP BLANK	FIELD BLANK	DUPLICATE	ANALYSIS PARAMETERS								
							VOC	BNA	TPH	FULL MET	As,Pb	TOC	EP TOX	CEC	H2O QUAL
QA/QC SAMPLES															
Trip Blanks															
TB-1	4/11	1330					X								
TB-2	4/13	0745					X								
TB-3	4/14	1100					X								
TB-4	4/25	0850					X								
TB-5	4/27	0835					X								
TB-6	4/28	1800					X								
TB-7	4/30	0925					X								
TB-8	5/1	1520					X								
TB-9	7/25	0730					X								
Field Blanks															
FB-1	4/19	1138					X	X	X	X					
FB-2	4/30	0840					X	X	X	X					
FB-3	7/25	0740					X	X	X		X				
Equipment Blanks															
EB-1	4/11	1330					X	X	X		X				
EB-3	4/13	0745					X	X	X		X				
EB-4	4/14	1041					X	X	X	X					
EB-5	4/15	0745					X	X	X	X					
EB-6	4/16	0912					X	X	X		X				
EB-7	4/17	1045					X	X	X		X				
EB-8	4/25	0950					X	X	X		X				
EB-9	4/26	1030					X	X	X		X				
EB-10	4/27	1200					X	X	X		X				
EB-11	4/28	1700					X	X	X	X					
EB-12	4/30	1945					X	X	X		X				
EB-13	5/1	1600					X	X	X	X					
EB-14	5/2	1050					X	X	X	X					
EB-15	7/25	1425					X	X	X		X				

TABLE E-2. QUALIFIERS AND ACRONYMS FOR SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Information concerning abbreviations found on data tables can be found here.

* These samples were collected in January and filtered in the field. The units were reported as mg/L rather than µg/L; for the sake of consistency, the units were changed to µg/L. The following detection limits also changed: iron (0.01 mg/L) and manganese (0.001 mg/L). If lead was not detected at the ICP detection limit, then GFAA was used to achieve the lower limit to further analyze the samples.

** These samples were collected unfiltered in January. The following detection limits changed: sodium (0.5 mg/L), calcium (0.5 mg/L), and magnesium (0.5 mg/L).

ND This compound/parameter was not detected at or above the detection level.

NT This compound/parameter was not analyzed in the respective sampling round.

(B) Compound was detected in the associated method blank.

(CC) Continuing calibration verification relative response factor outside control limits.

(D) Dilution analysis. This flag is associated with the (E) flag.

(E) The analysis was performed and the concentration exceeds the calibration range of the gas chromatograph/mass spectrometer. If one or more of the TCL's is above the detection level, the sample or extract must be reanalyzed for all of the appropriate TCL's. If dilution causes results from the first analysis to be below the detection level, both analyses would be reported.

(EB) Compound/parameter was also detected in the associated equipment blank.

(EH) The extraction holding time was exceeded for the respective sample.

(FB) Compound/parameter was also detected in the associated field blank.

(I) The ICP interference check sample percent recovery exceeded the control limits in this instance.

(H) The CLP holding time was exceeded for this compound/element.

(IC) The initial calibration verification relative response factor was outside the normal control limits.

TABLE E-2. QUALIFIERS AND ACRONYMS FOR SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

(J) Estimated value. This flag is used when the mass spectral data indicates the presence of an analyte but the result is below the sample quantitation level.

(JB) Indicates that the compound/element was detected in the associated method blank but was at a quantitation level below the normal detection level. This is also an estimation of the true result.

(JX) A combination of (J) and (X), the compound/element in question coeluted but at a level lower than the minimum level of detection.

(MD) MS/MSD RPD was outside the established control limits for this analyte.

(RE) Laboratory re-extractions were performed when questionable results need further justification.

(S) The surrogate recovery was below the minimum control limits.

(T) The analyte in question was found to coelute from the gas chromatographic column with a similar analyte also noted. The instrument was not able to effectively separate these two constituents and normally reflects a similar, if not equal, level of contamination.

(TB) Compound or element also detected in the associated trip blank.

(U) Indicates the compound was analyzed but not detected.

(X) Same as (T) but was used in a different round of analysis with similar results.

MWx-y Site x at Monitoring well y (groundwater sample collected in May).

GWx-y Site x at Monitoring well y (groundwater sample collected in Jan/Jul).

SW-x Surface water sample collected at Location x.

MWx-y-z Site x at Monitoring well y and Depth z(feet) (soil sample).

Bx-y-z Site x at Soil boring y and Depth z(feet) (background soil sample).

BKx-y Background soil sample.

FB-x Field blank.

EB-x Equipment blank.

TB-x Trip blank.

QA-x Quality assurance samples.

TABLE E-3. SITE 1 SOIL BORING DATA SUMMARY FOR SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

	1989 DATA					1987 DATA					1989 & 1987 DATA			
Parameters	LLD (1)	Mean (1-4)	Range (Min-Max) (3,4)	No. Samples (3,4)	No. Positives (3,4)	LLD (1)	Mean (1-4)	Range (Min-Max) (3,4)	No. Samples (3,4)	No. Positives (3,4)	Grand Mean (1-4)	Range (Min-Max) (3,4)	No. Samples (3,4)	No. Positives (3,4)
PETROLEUM HYDROCARBONS	20	222.80	(ND-380)	12	5	0.5	65.50	(ND-99)	4	2	144.15	(ND-380)	16	7
TOTAL ORGANIC CARBON	0.1	1.26	(0.8-1.6)	10	10	NT	NT	(NT)	0	0	1.26	(0.8-1.6)	10	10
INORGANICS														
Arsenic	0.5	3.75	(1.1-12.2)	12	12	0.5	2.55	(1.4-3.1)	4	4	3.15	(1.1-12.2)	16	16
Beryllium	0.1	NT	(NT)	0	0	NT	NT	(NT)	0	0	NT	(NT)	0	0
Cadmium	0.5	NT	(NT)	0	0	NT	NT	(NT)	0	0	NT	(NT)	0	0
Chromium	1	NT	(NT)	0	0	1	NT	(NT)	0	0	NT	(NT)	0	0
Copper	1	NT	(NT)	0	0	1	NT	(NT)	0	0	NT	(NT)	0	0
Lead	0.5	2.80	(2.2-4.6)	12	12	0.5	5.71	(3-12)	4	4	4.26	(2.2-12)	16	16
Nickel	2	NT	(NT)	0	0	2	NT	(NT)	0	0	NT	(NT)	0	0
Selenium	0.5	NT	(NT)	0	0	0.5	NT	(NT)	0	0	NT	(NT)	0	0
Zinc	1	NT	(NT)	0	0	1	NT	(NT)	0	0	NT	(NT)	0	0
VOLATILE ORGANICS														
Acetone	8	50.86	(ND-73)	12	11	10	28.00	(ND-28)	4	1	39.43	(ND-73)	16	12
Ethylbenzene	2	920.00	(ND-920)	12	1	5	2300.00	(ND-2300)	4	1	1610.00	(ND-2300)	16	2
Methylene Chloride	2	5.11	(ND-7)	12	7	NT	NT	(NT)	0	0	5.11	(ND-7)	12	7
Toluene	2	ND	(ND)	12	0	NT	NT	(NT)	0	0	ND	(ND)	12	0
Total Xylenes	2	4125.00	(ND-8100)	12	2	5	6300.00	(ND-6300)	4	1	5212.50	(ND-8100)	16	3
SEMIVOLATILE ORGANICS														
Acenaphthene	38	132.75	(ND-162)	12	2	NT	NT	(NT)	0	0	132.75	(ND-162)	12	2
Anthracene	38	245.00	(ND-330)	12	2	NT	NT	(NT)	0	0	245.00	(ND-330)	12	2
Benzo(a)anthracene	38	347.50	(ND-455)	12	2	NT	NT	(NT)	0	0	347.50	(ND-455)	12	2
Benzo(a)pyrene	76	250.00	(ND-315)	12	2	NT	NT	(NT)	0	0	250.00	(ND-315)	12	2
Benzo(b)fluoranthene	76	257.50	(ND-310)	12	2	NT	NT	(NT)	0	0	257.50	(ND-310)	12	2
Benzo(g,h,i)perylene	76	139.00	(ND-180)	12	2	NT	NT	(NT)	0	0	139.00	(ND-180)	12	2
Benzo(k)fluoranthene	76	185.00	(ND-240)	12	2	NT	NT	(NT)	0	0	185.00	(ND-240)	12	2
Bis(2-ethylhexyl)phthalate	38	59.75	(ND-112)	12	4	NT	NT	(NT)	0	0	59.75	(ND-112)	12	4
Chrysene	38	340.00	(ND-430)	12	2	NT	NT	(NT)	0	0	340.00	(ND-430)	12	2
Dibenzofuran	38	75.50	(ND-87.5)	12	2	NT	NT	(NT)	0	0	75.50	(ND-87.5)	12	2
Dibenzo(a,h)anthracene	76	ND	(ND)	12	0	NT	NT	(NT)	0	0	ND	(ND)	12	0
Diethylphthalate	38	ND	(ND)	12	0	NT	NT	(NT)	0	0	ND	(ND)	12	0
Dimethylphthalate	38	ND	(ND)	12	0	NT	NT	(NT)	0	0	ND	(ND)	12	0
Di-n-butylphthalate	38	ND	(ND)	12	0	NT	NT	(NT)	0	0	ND	(ND)	12	0
Di-n-octyltphthalate	38	ND	(ND)	12	0	NT	NT	(NT)	0	0	ND	(ND)	12	0
Fluoranthene	38	745.00	(ND-965)	12	2	NT	NT	(NT)	0	0	745.00	(ND-965)	12	2
Fluorene	38	119.33	(ND-199.5)	12	3	NT	NT	(NT)	0	0	119.33	(ND-199.5)	12	3
Indeno(1,2,3-c,d)pyrene	76	170.00	(ND-220)	12	2	NT	NT	(NT)	0	0	170.00	(ND-220)	12	2
2-Methylnaphthalene	38	458.67	(ND-750)	12	3	NT	NT	(NT)	0	0	458.67	(ND-750)	12	3
4-Methylphenol	38	ND	(ND)	12	0	NT	NT	(NT)	0	0	ND	(ND)	12	0
Naphthalene	76	293.00	(ND-490)	12	3	NT	NT	(NT)	0	0	293.00	(ND-490)	12	3
Phenanthrene	38	885.00	(ND-1275)	12	2	NT	NT	(NT)	0	0	885.00	(ND-1275)	12	2
Phenol	38	66.00	(ND-66)	12	1	NT	NT	(NT)	0	0	66.00	(ND-66)	12	1
Pyrene	38	852.50	(ND-1055)	12	2	NT	NT	(NT)	0	0	852.50	(ND-1055)	12	2

(1)Units: PETROLEUM HYDROCARBONS, INORGANICS-mg/kg DB
TOTAL ORGANIC CARBON-% DB
VOLATILE ORGANICS, SEMIVOLATILE ORGANICS-ug/kg DB
(2)Means were calculated using means of re-extractions with first extractions, of duplicates with original samples, and of both where applicable.
(3)If the analyte concentration was greater than 10 times the method blank concentration, the data were included; otherwise, the data were excluded.
(4)ND's were considered a sample but they were not considered in the calculation of the means.
ND-Not Detected; NT-Not Tested

TABLE E-4. SITE 1 MONITORING WELL DATA SUMMARY FOR SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

	1989 DATA(5)					1987 DATA					1989 & 1987 DATA(5)			
Parameter	LLD (1)	Mean (1-4)	(Min-Max) Range (3,4)	No. Samples (3,4)	No. Positives (3,4)	LLD (1)	Mean (1-4)	(Min-Max) Range (3,4)	No. Samples (3,4)	No. Positives (3,4)	Grand Mean (1-4)	(Min-Max) Range (3,4)	No. Samples (3,4)	No. Positives (3,4)
PETROLEUM HYDROCARBONS	0.5	2.08	(ND-5.9)	13	5	0.1	4.45	(ND-4.5)	4	2	3.27	(ND-5.9)	17	7
INORGANICS														
Dissolved Arsenic	5	6.40	(ND-12.8)	13	2	5	9.75	(ND-13)	4	2	8.08	(ND-13)	17	4
Dissolved Cadmium	1	NT	(NT)	0	0	1	NT	(NT)	0	0	NT	(NT)	0	0
Dissolved Chromium	1	NT	(NT)	0	0	1	NT	(NT)	0	0	NT	(NT)	0	0
Dissolved Copper	1	NT	(NT)	0	0	1	NT	(NT)	0	0	NT	(NT)	0	0
Dissolved Lead	1	3.24	(0.009-9.7)	13	13	1	14.00	(ND-24)	4	3	8.62	(ND-24)	17	16
Dissolved Nickel	2	NT	(NT)	0	0	2	NT	(NT)	0	0	NT	(NT)	0	0
Dissolved Selenium	5	NT	(NT)	0	0	5	NT	(NT)	0	0	NT	(NT)	0	0
Dissolved Zinc	1	NT	(NT)	0	0	1	NT	(NT)	0	0	NT	(NT)	0	0
VOLATILE ORGANICS														
Acetone	5	7.10	(ND-7.1)	13	1	5	ND	(ND)	4	0	7.10	(ND-7.1)	17	1
Benzene	1	20.90	(ND-20.9)	13	1	1	63.50	(ND-120)	4	2	42.20	(ND-120)	17	3
Ethylbenzene	1	89.83	(ND-126)	13	3	1	655.00	(ND-1100)	4	2	372.42	(ND-1100)	17	5
Methylene Chloride	1	ND	(ND)	13	0	1	NT	(NT)	0	0	ND	(ND)	13	0
Toluene	1	ND	(ND)	13	0	1	NT	(NT)	0	0	ND	(ND)	13	0
Total Xylenes	1	400.08	(ND-568.5)	13	4	1	3050.00	(ND-3200)	4	2	1725.04	(ND-3200)	17	6
SEMIVOLATILE ORGANICS														
Acenaphthene	2	4.50	(ND-7)	13	2	2	NT	(NT)	0	0	4.50	(ND-7)	13	2
Anthracene	2	5.70	(ND-5.7)	13	1	2	NT	(NT)	0	0	5.70	(ND-5.7)	13	1
Benzo(a)anthracene	2	3.35	(ND-4.7)	13	2	2	NT	(NT)	0	0	3.35	(ND-4.7)	13	2
Benzo(a)pyrene	4	ND	(ND)	13	0	4	NT	(NT)	0	0	ND	(ND)	13	0
Benzo(b)fluoranthene	4	5.50	(ND-5.5)	13	1	4	NT	(NT)	0	0	5.50	(ND-5.5)	13	1
Benzo(k)fluoranthene	4	5.50	(ND-5.5)	13	1	4	NT	(NT)	0	0	5.50	(ND-5.5)	13	1
Bis(2-ethylhexyl)phthalate	2	63.41	(2-640)	13	13	2	NT	(NT)	0	0	63.41	(2-640)	13	13
Chrysene	2	3.35	(ND-4.7)	13	2	2	NT	(NT)	0	0	3.35	(ND-4.7)	13	2
Dibenzofuran	2	3.30	(ND-3.3)	13	1	2	NT	(NT)	0	0	3.30	(ND-3.3)	13	1
Diethylphthalate	2	ND	(ND)	13	0	2	NT	(NT)	0	0	ND	(ND)	13	0
2,4-Dimethylphenol	2	12.75	(ND-23.5)	13	2	2	NT	(NT)	0	0	12.75	(ND-23.5)	13	2
Di-n-butylphthalate	2	4.00	(ND-4)	13	1	2	NT	(NT)	0	0	4.00	(ND-4)	13	1
Di-n-octylphthalate	2	2.00	(ND-2)	13	1	2	NT	(NT)	0	0	2.00	(ND-2)	13	1
Fluoranthene	2	9.65	(ND-15.3)	13	2	2	NT	(NT)	0	0	9.65	(ND-15.3)	13	2
Fluorene	2	4.35	(ND-6.7)	13	2	2	NT	(NT)	0	0	4.35	(ND-6.7)	13	2
Indeno(1,2,3-c,d)pyrene	4	ND	(ND)	13	0	4	NT	(NT)	0	0	ND	(ND)	13	0
2-Methylnaphthalene	2	11.75	(ND-34)	13	4	2	NT	(NT)	0	0	11.75	(ND-34)	13	4
Naphthalene	4	22.68	(ND-56.5)	13	4	4	NT	(NT)	0	0	22.68	(ND-36.5)	13	4
Phenanthrene	2	8.00	(ND-14)	13	2	2	NT	(NT)	0	0	8.00	(ND-14)	13	2
Pyrene	2	10.15	(ND-15.3)	13	2	2	NT	(NT)	0	0	10.15	(ND-15.3)	13	2

(1)LLD is the Lowest Level of Detection given in units of mg/L for Petroleum Hydrocarbons, and ug/L for Inorganics, Volatile Organics, and Semi-Volatile Organics.
(2)Means were calculated by taking the means of re-extractions,duplicates, and different sampling dates and means of all the above where appropriate ND's were not factored in to the calculations of the means.
(3)If the analyte concentration were greater than 10 times the method blank concentration, the data were included; otherwise, the data were excluded
(4)ND's were considered a sample but not considered in the calculation of the means.
(5)1989 data includes January, April and July samples.
ND-Not Detected
NT-Not Tested
*Inorganics were filtered on the site in 1989.

TABLE E-5. SITE 3 SOIL BORING DATA SUMMARY FOR SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

	1989 DATA					1987 DATA					1989 & 1987 DATA			
Parameters	LLD (1)	Mean (1-4)	Range (Max-Min) (3,4)	No. Samples (3,4)	No. Positives (3,4)	LLD (1)	Mean (1,2,3a,4)	Range (Max-Min) (3,4)	No. Samples (3,4)	No. Positives (3,4)	Grand Mean (1,2,3a,4)	Range (Max-Min) (3,4)	No. Samples (3,4)	No. Positives (3,4)
PETROLEUM HYDROCARBONS	20	79.19	(ND-120)	10	8	20	ND	(ND)	4	0	79.19	(ND-120)	14	8
TOTAL ORGANIC CARBON	0.1	1.52	(0.4-2.2)	6	6	NT	NT	(NT)	0	0	1.52	(0.4-2.2)	6	6
INORGANICS														
Arsenic	0.5	7.73	(5.6-10.6)	10	10	0.5	2.93	(1.4-6.2)	4	4	5.33	(1.4-10.6)	14	14
Beryllium	0.1	0.69	(0.3-1.2)	10	10	NT	NT	(NT)	0	0	0.69	(0.3-1.2)	10	10
Cadmium	0.5	0.55	(ND-0.6)	10	2	NT	NT	(NT)	0	0	0.55	(ND-0.6)	10	2
Chromium	1	19.75	(12-29)	10	10	1	6.38	(5-9)	4	4	13.07	(5-29)	14	14
Copper	1	14.10	(10-22)	10	10	1	3.25	(2-4)	4	4	8.68	(2-22)	14	14
Lead	0.5	11.06	(7.05-15.1)	10	10	0.5	2.94	(2.4-3.2)	4	4	7.00	(2.4-15.1)	14	14
Nickel	2	22.90	(17-31)	10	10	2	15.25	(12-19)	4	4	19.08	(12-31)	14	14
Selenium	0.5	ND	(ND)	10	0	0.5	2.55	(ND-2.7)	4	1	2.55	(ND-2.7)	14	1
Zinc	1	70.55	(47.5-110)	10	10	1	18.75	(14-25)	4	4	44.65	(14-110)	14	14
VOLATILE ORGANICS														
Acetone	8	220.00	(ND-220)	10	1	10	22.67	(ND-28)	4	3	121.34	(ND-220)	14	4
Ethylbenzene	2	15816.67	(ND-36500)	10	3	5	ND	(ND)	4	0	151816.67	(ND-36500)	14	3
Methylene Chloride	2	4.25	(ND-5)	10	4	NT	ND	(ND)	4	0	4.25	(ND-5)	14	4
Toluene	2	100.00	(ND-100)	10	1	NT	ND	(ND)	4	0	100.00	(ND-100)	14	1
Total Xylenes	2	19463.25	(ND-65000)	10	4	5	ND	(ND)	4	0	19463.25	(ND-65000)	14	4
SEMIVOLATILE ORGANICS														
Acenaphthene	38	ND	(ND)	10	0	NT	NT	(NT)	0	0	ND	(ND)	10	0
Anthracene	38	ND	(ND)	10	0	NT	NT	(NT)	0	0	ND	(ND)	10	0
Benzo(a)anthracene	38	180.00	(ND-180)	10	1	NT	NT	(NT)	0	0	180.00	(ND-180)	10	1
Benzo(a)pyrene	76	330.00	(ND-330)	10	1	NT	NT	(NT)	0	0	330.00	(ND-330)	10	1
Benzo(b)fluoranthene	76	125.50	(ND-220)	10	2	NT	NT	(NT)	0	0	125.50	(ND-220)	10	2
Benzo(g,h,i)perylene	76	170.00	(ND-170)	10	1	NT	NT	(NT)	0	0	170.00	(ND-170)	10	1
Benzo(k)fluoranthene	76	145.50	(ND-260)	10	2	NT	NT	(NT)	0	0	145.50	(ND-260)	10	2
Bis(2-ethylhexyl)phthalate	38	ND	(ND)	10	0	NT	NT	(NT)	0	0	ND	(ND)	10	0
Chrysene	38	230.00	(ND-230)	10	1	NT	NT	(NT)	0	0	230.00	(ND-230)	10	1
Dibenzofuran	38	ND	(ND)	10	0	NT	NT	(NT)	0	0	ND	(ND)	10	0
Dibenzo(a,h)anthracene	76	ND	(ND)	10	0	NT	NT	(NT)	0	0	ND	(ND)	10	0
Diethylphthalate	38	ND	(ND)	10	0	NT	NT	(NT)	0	0	ND	(ND)	10	0
Dimethylphthalate	38	ND	(ND)	10	0	NT	NT	(NT)	0	0	ND	(ND)	10	0
Di-n-butylphthalate	38	ND	(ND)	10	0	NT	NT	(NT)	0	0	ND	(ND)	10	0
Di-n-octylphthalate	38	12.00	(ND-12)	10	1	NT	NT	(NT)	0	0	12.00	(ND-12)	10	1
Fluoranthene	38	83.00	(ND-83)	10	1	NT	NT	(NT)	0	0	83.00	(ND-83)	10	1
Fluorene	38	ND	(ND)	10	0	NT	NT	(NT)	0	0	ND	(ND)	10	0
Indeno(1,2,3-c,d)pyrene	76	180.00	(ND-180)	10	1	NT	NT	(NT)	0	0	180.00	(ND-180)	10	1
2-Methylnaphthalene	38	157.75	(ND-350)	10	4	NT	NT	(NT)	0	0	157.75	(ND-350)	10	4
4-Methylphenol	38	230.00	(ND-230)	10	1	NT	NT	(NT)	0	0	230.00	(ND-230)	10	1
Naphthalene	76	960.00	(ND-2400)	10	4	NT	NT	(NT)	0	0	960.00	(ND-2400)	10	4
Phenanthrene	38	ND	(ND)	10	0	NT	NT	(NT)	0	0	ND	(ND)	10	0
Phenol	38	49.00	(ND-49)	10	1	NT	NT	(NT)	0	0	49.00	(ND-49)	10	1
Pyrene	38	112.50	(ND-200)	10	2	NT	NT	(NT)	0	0	112.50	(ND-200)	10	2

(1)Units: PETROLEUM HYDROCARBONS,INORGANICS-mg/kg DB
TOTAL ORGANIC CARBON -% DB
VOLATILE ORGANICS,SEMIVOLATILE ORGANICS-ug/kg DB
(2)Means were calculated using means of re-extractions with first extractions, of duplicate samples with original samples, and of both where applicable
(3)If the analyte concentration was greater than 10 times the method blank concentration, the data were included; otherwise, the data were excluded.
(3a)If the analyte concentration was greater than 5 times the method blank concentration, the data were included; otherwise, the data were excluded.
(4)ND's were considered a sample but they were not considered in the calculation of the means.
ND-Not Detected; NT-Not Tested

TABLE E-6. SITE 3 SURFACE SOIL DATA SUMMARY FOR SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Parameters	.....SURFACE SOILS 1989..... Mean (1-4)	Range (Max-Min) (3,4)	No. Samples (3,4)	No. Positives (3,4)
PETROLEUM HYDROCARBONS	89.63	(ND-120)	5	4
TOTAL ORGANIC CARBON	2.03	(1.7-2.4)	3	3
INORGANICS				
Arsenic	7.99	(5.6-10.6)	5	5
Beryllium	0.52	(0.3-1.0)	5	5
Cadmium	ND	(ND)	5	0
Chromium	16.30	(12-25)	5	5
Copper	12.00	(10-18)	5	5
Lead	10.23	(7.1-15.1)	5	5
Nickel	20.60	(17-25)	5	5
Selenium	ND	(ND)	5	0
Zinc	57.70	(47.5-87)	5	5
VOLATILE ORGANICS				
Acetone	ND	(ND)	5	0
Ethylbenzene	9850.00	(ND-9850)	5	1
Methylene Chloride	4.00	(ND-4)	5	2
Toluene	ND	(ND)	5	0
Total Xylenes	3751.00	(ND-11200)	5	2
SEMIVOLATILE ORGANICS				
Acenaphthene	ND	(ND)	5	0
Anthracene	ND	(ND)	5	0
Benzo(a)anthracene	180.00	(ND-180)	5	1
Benzo(a)pyrene	330.00	(ND-330)	5	1
Benzo(b)fluoranthene	220.00	(ND-220)	5	1
Benzo(g,h,i)perylene	170.00	(ND-170)	5	1
Benzo(k)fluoranthene	260.00	(ND-260)	5	1
Bis(2-ethylhexyl)phthalate	ND	(ND)	5	0
Chrysene	230.00	(ND-230)	5	11
Dibenzofuran	ND	(ND)	5	0
Dibenzo(a,h)anthracene	ND	(ND)	5	0
Diethylphthalate	ND	(ND)	5	0
Dimethylphthalate	ND	(ND)	5	0
Di-n-butylphthalate	ND	(ND)	5	0
Di-n-octylphthalate	ND	(ND)	5	0
Fluoranthene	83.00	(ND-83)	5	1
Fluorene	ND	(ND)	5	0
Indeno(1,2,3-c,d)pyrene	180.00	(ND-180)	5	1
2-Methylnaphthalene	ND	(ND)	5	0
4-Methylphenol	ND	(ND)	5	0
Naphthalene	170.00	(ND-170)	5	1
Phenanthrene	ND	(ND)	5	0
Phenol	49.00	(ND)	5	1
Pyrene	200.00	(ND-200)	5	1

(1)Units: PETROLEUM HYDROCARBONS,INORGANICS-mg/kg DB
TOTAL ORGANIC CARBON -% DB
VOLATILE ORGANICS,SEMIVOLATILE ORGANICS-ug/kg DB
(2)Means were calculated using means of re-extractions with first extractions, of duplicate samples with original samples, and of both where applicable.
(3)If the analyte concentration was greater than 10 times the method blank concentration, the data were included; otherwise, the data were excluded.
(3a)If the analyte concentration was greater than 5 times the method blank concentration, the data were included; otherwise, the data were excluded.
(4)ND's were considered a sample but they were not considered in the calculation of the means.
ND-Not Detected; NT-Not Tested

TABLE E-7. SITE 3 MONITORING WELL DATA SUMMARY FOR SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

	1989 DATA (5)					1987 DATA					1989 & 1987 DATA(5)			
Parameter	LLD (1)	Mean (1-4)	Range (Min-Max) (1)	No. Samples (2,3,4)	No. Positives (3,4)	LLD (1)	Mean (1,2,3a,4)	Range (Min-Max) (4)	No. Samples (4)	No. Positives (3,4)	Grand Mean (1,2,3,4)	Range (Min-Max) (4)	No. Samples (4)	No. Positives (3,4)
PETROLEUM HYDROCARBONS	0.5	ND	(ND)	5	0	0.1 **	0.13	(ND-0.2)	4	2	0.13	(ND-0.2)	9	2
INORGANICS														
Dissolved Arsenic	5	14.67	(ND-30)	5	3	5	6.00	*(ND-6)	4	1	10.34	(ND-30)	9	4
Dissolved Cadmium	1	1.00	(ND-1)	5	2	NT	NT	*(NT)	4	0	1.00	(ND-1)	5	2
Dissolved Chromium	1	5.00	(2-7)	5	5	1	2.00	*(1-4)	4	4	3.50	(2-7)	9	9
Dissolved Copper	1	10.00	(5-14)	5	5	1	3.38	*(2-7)	4	4	6.69	(2-14)	9	9
Dissolved Lead	1	10.62	(4-16)	5	5	5	ND	*(ND)	4	0	10.62	(ND-16)	9	5
Dissolved Nickel	2	24.10	(14.5-34)	5	5	2	13.00	*(9-18)	4	4	18.55	(9-34)	9	9
Dissolved Selenium	5	6.75	(ND-9)	5	4	5	ND	*(ND)	4	0	6.75	(ND-9)	9	4
Dissolved Zinc	1	40.20	(22-53)	5	5	1	15.13	*(14-21)	4	4	27.67	(14-53)	9	9
VOLATILE ORGANICS														
Acetone	5	ND	(ND)	5	0	5	ND	(ND)	4	0	ND	(ND)	9	0
Benzene	1	ND	(ND)	5	0	1	ND	(ND)	4	0	ND	(ND)	9	0
Ethylbenzene	1	ND	(ND)	5	0	1	ND	(ND)	4	0	ND	(ND)	9	0
Methylene Chloride	1	ND	(ND)	5	0	NT	NT	(NT)	4	0	ND	(ND)	9	0
Toluene	1	ND	(ND)	5	0	NT	NT	(NT)	4	0	ND	(ND)	9	0
Total Xylenes	1	ND	(ND)	5	0	1	ND	(ND)	4	0	ND	(ND)	9	0
SEMIVOLATILE ORGANICS														
Acenaphthene	2	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0
Anthracene	2	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0
Benzo(a)anthracene	2	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0
Benzo(a)pyrene	4	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0
Benzo(b)fluoranthene	4	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0
Benzo(k)fluoranthene	4	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0
Bis(2-ethylhexyl)phthalate	2	9.33	(2-21)	5	5	NT	NT	(NT)	0	0	9.33	(2-21)	5	5
Chrysene	2	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0
Dibenzofuran	2	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0
Diethylphthalate	2	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0
2,4-Dimethylphenol	2	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0
Di-n-butylphthalate	2	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0
Di-n-octylphthalate	2	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0
Fluoranthrene	2	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0
Fluorene	2	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0
Indeno(1,2,3-c,d)pyrene	4	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0
2-Methylnaphthalene	2	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0
Naphthalene	4	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0
Phenanthrene	2	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0
Pyrene	2	ND	(ND)	5	0	NT	NT	(NT)	0	0	ND	(ND)	5	0

(1) Units: ug/L (LLD denotes Lowest Level of Detection)
(2) Means were calculated using means of re-extractions with first extractions, of duplicate samples with original samples, and of both where applicable.
(3) If the analyte concentration was greater than 10 times the method blank concentration, the data were included; otherwise, the data were excluded.
(3a) If the analyte concentration was greater than 5 times the method blank concentration, the data were included; otherwise, the data were excluded.
(4) ND's were considered a sample but they were not considered in the calculation of the mean.
(5) 1989 data includes January, April and July samples.
*Inorganics were filtered on the site in 1987.
**1987 Petroleum Hydrocarbon units are mg/L.
ND-Not Detected; NT-Not Tested

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data January 1989

	Lab Sample Number: 14016-13 Project Samplee Number: GW1-1			Lab Sample Number: 14016-14 Project Sample Number: GW1-3			Lab Sample Number: 14016-15 Project Sample Number: GW1-4		
	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection
PETROLEUM HYDROCARBONS	0.5	U	mg/L	0.5	0.5	U mg/L	0.5	13	mg/L	0.5
INORGANICS										
Arsenic	0.005	U	mg/L	0.005	0.007	mg/L	0.005	0.005	U mg/L	0.005
Lead(by ICP)	0.009		mg/L	0.005	0.036	mg/L	0.005	0.009	mg/L	0.005
Lead(by Graphite Furnace)	NT		mg/L	NT	NT	U mg/L	NT	NT	mg/L	NT
Magnesium	27		mg/L	0.5	NT	U mg/L	NT	35	mg/L	0.5
Sodium	7.3		mg/L	0.5	NT	U mg/L	NT	17	mg/L	0.5
Calcium	120		mg/L	0.5	NT	U mg/L	NT	150	mg/L	0.5
Manganese	9.0		mg/L	0.001	NT	U mg/L	NT	1.7	mg/L	0.001
Iron	8.6		mg/L	0.01	NT	U mg/L	NT	13	mg/L	0.01
Total Suspended Solids	140		mg/L	2	NT	U mg/L	NT	92	mg/L	2
Total Dissolved Solids	520	B	mg/L	2	NT	U mg/L	NT	700	B mg/L	2
Chloride	14		mg/L	1	NT	U mg/L	NT	28	mg/L	1
Nitrate	11		mg/L	0.2	NT	U mg/L	NT	0.2	U mg/L	0.2
Sulfate	57		mg/L	1	NT	U mg/L	NT	99	mg/L	1
Total Alkalinity	310		mg/L	2	NT	U mg/L	NT	450	mg/L	2
Bicarbonate Alkakinity	310		mg/L	2	NT	U mg/L	NT	450	mg/L	2
Carbonate Alkalinity	2	U	mg/L	2	NT	U mg/L	NT	2	U mg/L	2
pH	6.3		Units	NA	NT	Units	NT	7.0	Units	NA
VOLATILE ORGANICS										
Chloromethane	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
Bromomethane	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
Vinyl Chloride	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
Chloroethane	3	U	ug/L	3	3	U ug/L	3	3	U ug/L	3
Methylene Chloride	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
Acetone	5	U	ug/L	5	5	U ug/L	5	8.1	ug/L	5
Carbon Disulfide	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
1,1-Dichloroethene	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
1,1-Dichloroethane	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
trans-1,2-Dichloroethene	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
cis-1,2-Dichloroethene	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
total-1,2-Dichloroethene	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
Chloroform	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
2-Butanone	3	U	ug/L	3	3	U ug/L	3	3	U ug/L	3
1,2-Dichloroethane	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
1,1,1-Trichloroethane	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
Carbon Tetrachloride	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
Vinyl Acetate	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
Bromodichloromethane	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
1,2-Dichloropropane	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
Trichloroethene	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
Benzene	1	U	ug/L	1	20.9	ug/L	1	1	U ug/L	1
Dibromochloromethane	3	U	ug/L	3	3	U ug/L	3	3	U ug/L	3
1,1,2-Trichloroethane	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
Bromoform	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
4-Methyl-2-Pentanone	3	U	ug/L	3	3	U ug/L	3	3	U ug/L	3
2-Hexanone	3	U	ug/L	3	3	U ug/L	3	3	U ug/L	3
1,1,2,2-Tetrachloroethane	3	U	ug/L	3	3	U ug/L	3	3	U ug/L	3
Tetrachloroethene	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
Toluene	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
Chlorobenzene	3	U	ug/L	3	3	U ug/L	3	3	U ug/L	3
trans-1,3-Dichloropropene	3	U	ug/L	3	3	U ug/L	3	3	U ug/L	3
Ethylbenzene	1	U	ug/L	1	126	ug/L	1	65.2	ug/L	1
cis-1,3-Dichloropropene	3	U	ug/L	3	3	U ug/L	3	3	U ug/L	3
Styrene	1	U	ug/L	1	1	U ug/L	1	1	U ug/L	1
Total Xylenes	1	U	ug/L	1	558	ug/L	10	1650	ug/L	10

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data January 1989

	Lab Sample Number: 14016-13 Project Samplee Number: GW1-1			Lab Sample Number: 14016-14 Project Sample Number: GW1-3			Lab Sample Number: 14016-15 Project Sample Number: GW1-4		
SEMIVOLATILES	Test Results (Re-extraction)	Flag	Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection	Test Results (Re-extraction)	Flag Units	Lowest Level of Detection
Phenol	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
Aniline	10	U	ug/L	10	10	U ug/L	10	10	U ug/L	10
Bis(2-chloroethyl)ether	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
2-Chlorophenol	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
1,3-Dichlorobenzene	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
1,4-Dichlorobenzene	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
Benzyl Alcohol	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
1,2-Dichlorobenzene	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
2-Methylphenol	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
Bis(2-chloroisopropyl)ether	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
4-Methylphenol	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
N-Nitroso-di-n-propylamine	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
Hexachloroethane	4	U	ug/L	4	4	U ug/L	4	4	U ug/L	4
Nitrobenzene	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
Isophorone	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
2-Nitrophenol	4	U	ug/L	4	4	U ug/L	4	4	U ug/L	4
2,4-Dimethylphenol	2	U	ug/L	2	2	U ug/L	2	42	ug/L	2
Benzoic Acid	52	U	ug/L	52	50	U ug/L	50	51	U ug/L	51
Bis(2-chloroethoxy)methane	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
2,4-Dichlorophenol	4	U	ug/L	4	4	U ug/L	4	4	U ug/L	4
1,2,4 Trichlorobenzene	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
Naphthalene	4	U	ug/L	4	13	ug/L	4	4	U ug/L	4
4-Chloroaniline	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
Hexachlorobutadiene	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
4-Chloro-3-methylphenol	4	U	ug/L	4	4	U ug/L	4	4	U ug/L	4
2-Methylnaphthalene	2	U	ug/L	2	2	ug/L	2	2	ug/L	2
Hexachlorocyclopentadiene	4	U	ug/L	4	4	U ug/L	4	4	U ug/L	4
2,4,6-Trichlorophenol	4	U	ug/L	4	4	U ug/L	4	4	U ug/L	4
2,4,5-Trichlorophenol	4	U	ug/L	4	4	U ug/L	4	4	U ug/L	4
2-Chloronaphthalene	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
2-Nitroanaline	4	U	ug/L	4	4	U ug/L	4	4	U ug/L	4
Dimethylphthalate	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
Acenaphthylene	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
2,6-Dinitrotoluene	4	U	ug/L	4	4	U ug/L	4	4	U ug/L	4
3-Nitroanaline	10	U	ug/L	10	10	U ug/L	10	10	U ug/L	10
Acenaphthene	2	U	ug/L	2	7	ug/L	2	2	ug/L	2
2,4-Dinitrophenol	21	U	ug/L	21	20	U ug/L	20	20	U ug/L	20
4-Nitrophenol	21	U	ug/L	21	20	U ug/L	20	20	U ug/L	20
Dibenzofuran	2	U	ug/L	2	4	ug/L	2	2	U ug/L	2
2,4-Dinitrotoluene	4	U	ug/L	4	4	U ug/L	4	4	U ug/L	4
Diethylphthalate	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
4-Chlorophenyl phenylether	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
Fluorene	2	U	ug/L	2	8	ug/L	2	2	U ug/L	2
4-Nitroaniline	4	U	ug/L	4	4	U ug/L	4	4	U ug/L	4
4,6-Dinitro-2-methylphenol	21	U	ug/L	21	20	U ug/L	20	20	U ug/L	20
N-Nitrosodiphenylamine	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
1,2-Diphenylhydrazine	4	U	ug/L	4	4	U ug/L	4	4	U ug/L	4
4-Bromophenyl phenylether	4	U	ug/L	4	4	U ug/L	4	4	U ug/L	4
Hexachlorobenzene	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
Pentachlorophenol	21	U	ug/L	21	20	U ug/L	20	20	U ug/L	20
Phenanthrene	2	U	ug/L	2	16	ug/L	2	2	U ug/L	2
Anthracene	2	U	ug/L	2	6	ug/L	2	2	U ug/L	2
Di-n-butylphthalate	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
Fluoranthene	2	U	ug/L	2	16	ug/L	2	5	ug/L	2
Pyrene	2	U	ug/L	2	15	ug/L	2	8	ug/L	2
Benzidine	52	U	ug/L	52	50	U ug/L	50	51	U ug/L	51
Butylbenzylphthalate	2	U	ug/L	2	2	U ug/L	2	2	U ug/L	2
3,3'-Dichlorobenzidine	21	U	ug/L	21	20	U ug/L	20	20	U ug/L	20

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data January 1989

	Lab Sample Number: 14016-13 Project Samplee Number: GW1-1				Lab Sample Number: 14016-14 Project Sample Number: GW1-3				Lab Sample Number: 14016-15 Project Sample Number: GW1-4			
	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection
Benzo(a)anthracene	2	U	ug/L	2	5		ug/L	2	2	U	ug/L	2
Chrysene	2	U	ug/L	2	5		ug/L	2	2	U	ug/L	2
Bis(2-ethylhexyl)phthalate	2		ug/L	2	10		ug/L	2	4		ug/L	2
Di-n-octylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Benzo(b)fluoranthene	4	U	ug/L	4	5	T	ug/L	4	4	U	ug/L	4
Benzo(k)fluoranthene	4	U	ug/L	4	5	T	ug/L	4	4	U	ug/L	4
Benzo(a)pyrene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Indeno(1,2,3-c,d)pyrene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Dibenzo(a,h)anthracene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Benzo(g,h,i)perylene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data January 1989

	Lab Sample Number: 14016-11 Project Sample Number: QA-1			Lab Sample Number: 14016-12 Project Sample Number: QA-2		
	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection
PETROLEUM HYDROCARBONS	0.5	U	mg/L	0.5	0.5	U	mg/L	0.5
INORGANICS								
Arsenic	0.005	U	mg/L	0.005	0.005	U	mg/L	0.005
Lead(by ICP)	0.005	U	mg/L	0.005	0.005	U	mg/L	0.005
Lead(by Graphite Furnace)	0.001	U	mg/L	0.001	0.001	U	mg/L	0.001
Magnesium	NT	U	mg/L	NT	NT	U	mg/L	NT
Sodium	NT	U	mg/L	NT	NT	U	mg/L	NT
Calcium	NT	U	mg/L	NT	NT	U	mg/L	NT
Manganese	NT	U	mg/L	NT	NT	U	mg/L	NT
Iron	NT	U	mg/L	NT	NT	U	mg/L	NT
Total Suspended Solids	NT	U	mg/L	NT	NT	U	mg/L	NT
Total Dissolved Solids	NT	U	mg/L	NT	NT	U	mg/L	NT
Chloride	NT	U	mg/L	NT	NT	U	mg/L	NT
Nitrate	NT	U	mg/L	NT	NT	U	mg/L	NT
Sulfate	NT	U	mg/L	NT	NT	U	mg/L	NT
Total Alkalinity	NT	U	mg/L	NT	NT	U	mg/L	NT
Bicarbonate Alkakinity	NT	U	mg/L	NT	NT	U	mg/L	NT
Carbonate Alkalinity	NT	U	mg/L	NT	NT	U	mg/L	NT
pH	NT	U	NA	NT	NT	U	NA	NT
VOLATILE ORGANICS								
Chloromethane	1	U	ug/L	1	1	U	ug/L	1
Bromomethane	1	U	ug/L	1	1	U	ug/L	1
Vinyl Chloride	1	U	ug/L	1	1	U	ug/L	1
Chloroethane	3	U	ug/L	3	3	U	ug/L	3
Methylene Chloride	1	U	ug/L	1	1	U	ug/L	1
Acetone	5	U	ug/L	5	5	U	ug/L	5
Carbon Disulfide	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1
trans-1,2-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1
cis-1,2-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1
total-1,2-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1
Chloroform	1	U	ug/L	1	1	U	ug/L	1
2-Butanone	3	U	ug/L	3	3	U	ug/L	3
1,2-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1
1,1,1-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1
Carbon Tetrachloride	1	U	ug/L	1	1	U	ug/L	1
Vinyl Acetate	1	U	ug/L	1	1	U	ug/L	1
Bromodichloromethane	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloropropane	1	U	ug/L	1	1	U	ug/L	1
Trichloroethene	1	U	ug/L	1	1	U	ug/L	1
Benzene	1	U	ug/L	1	1	U	ug/L	1
Dibromochloromethane	3	U	ug/L	3	3	U	ug/L	3
1,1,2-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1
Bromoform	1	U	ug/L	1	1	U	ug/L	1
4-Methyl-2-Pentanone	3	U	ug/L	3	3	U	ug/L	3
2-Hexanone	3	U	ug/L	3	3	U	ug/L	3
1,1,2,2-Tetrachloroethane	3	U	ug/L	3	3	U	ug/L	3
Tetrachloroethene	1	U	ug/L	1	1	U	ug/L	1
Toluene	1	U	ug/L	1	1	U	ug/L	1
Chlorobenzene	3	U	ug/L	3	3	U	ug/L	3
trans-1,3-Dichloropropene	3	U	ug/L	3	3	U	ug/L	3
Ethylbenzene	1	U	ug/L	1	1	U	ug/L	1
cis-1,3-Dichloropropene	3	U	ug/L	3	3	U	ug/L	3
Styrene	1	U	ug/L	1	1	U	ug/L	1
Total Xylenes	1	U	ug/L	1	1	U	ug/L	1

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data January 1989

	Lab Sample Number: 14016-11 Project Sample Number: QA-1			Lab Sample Number: 14016-12 Project Sample Number: QA-2		
	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection
SEMIVOLATILES						
Phenol	2	U ug/L	2	2	U ug/L	2
Aniline	10	U ug/L	10	10	U ug/L	10
Bis(2-chloroethyl)ether	2	U ug/L	2	2	U ug/L	2
2-Chlorophenol	2	U ug/L	2	2	U ug/L	2
1,3-Dichlorobenzene	2	U ug/L	2	2	U ug/L	2
1,4-Dichlorobenzene	2	U ug/L	2	2	U ug/L	2
Benzyl Alcohol	2	U ug/L	2	2	U ug/L	2
1,2-Dichlorobenzene	2	U ug/L	2	2	U ug/L	2
2-Methylphenol	2	U ug/L	2	2	U ug/L	2
Bis(2-chloroisopropyl)ether	2	U ug/L	2	2	U ug/L	2
4-Methylphenol	2	U ug/L	2	2	U ug/L	2
N-Nitroso-di-n-propylamine	2	U ug/L	2	2	U ug/L	2
Hexachloroethane	4	U ug/L	4	4	U ug/L	4
Nitrobenzene	2	U ug/L	2	2	U ug/L	2
Isophorone	2	U ug/L	2	2	U ug/L	2
2-Nitrophenol	4	U ug/L	4	4	U ug/L	4
2,4-Dimethylphenol	2	U ug/L	2	2	U ug/L	2
Benzoic Acid	50	U ug/L	50	50	U ug/L	50
Bis(2-chloroethoxy)methane	2	U ug/L	2	2	U ug/L	2
2,4-Dichlorophenol	4	U ug/L	4	4	U ug/L	4
1,2,4-Trichlorobenzene	2	U ug/L	2	2	U ug/L	2
Naphthalene	4	U ug/L	4	4	U ug/L	4
4-Chloroaniline	2	U ug/L	2	2	U ug/L	2
Hexachlorobutadiene	2	U ug/L	2	2	U ug/L	2
4-Chloro-3-methylphenol	4	U ug/L	4	4	U ug/L	4
2-Methylnaphthalene	2	U ug/L	2	2	U ug/L	2
Hexachlorocyclopentadiene	4	U ug/L	4	4	U ug/L	4
2,4,6-Trichlorophenol	4	U ug/L	4	4	U ug/L	4
2,4,5-Trichlorophenol	4	U ug/L	4	4	U ug/L	4
2-Chloronaphthalene	2	U ug/L	2	2	U ug/L	2
2-Nitroanaline	4	U ug/L	4	4	U ug/L	4
Dimethylphthalate	2	U ug/L	2	2	U ug/L	2
Acenaphthylene	2	U ug/L	2	2	U ug/L	2
2,6-Dinitrotoluene	4	U ug/L	4	4	U ug/L	4
3-Nitroanaline	10	U ug/L	10	10	U ug/L	10
Acenaphthene	2	U ug/L	2	2	U ug/L	2
2,4-Dinitrophenol	20	U ug/L	20	20	U ug/L	20
4-Nitrophenol	20	U ug/L	20	20	U ug/L	20
Dibenzofuran	2	U ug/L	2	2	U ug/L	2
2,4-Dinitrotoluene	4	U ug/L	4	4	U ug/L	4
Diethylphthalate	2	U ug/L	2	2	U ug/L	2
4-Chlorophenyl phenylether	2	U ug/L	2	2	U ug/L	2
Fluorene	2	U ug/L	2	2	U ug/L	2
4-Nitroaniline	4	U ug/L	4	4	U ug/L	4
4,6-Dinitro-2-methylphenol	20	U ug/L	20	20	U ug/L	20
N-Nitrosodiphenylamine	2	U ug/L	2	2	U ug/L	2
1,2-Diphenylhydrazine	4	U ug/L	4	4	U ug/L	4
4-Bromophenyl phenylether	4	U ug/L	4	4	U ug/L	4
Hexachlorobenzene	2	U ug/L	2	2	U ug/L	2
Pentachlorophenol	20	U ug/L	20	20	U ug/L	20
Phenanthrene	2	U ug/L	2	2	U ug/L	2
Anthracene	2	U ug/L	2	2	U ug/L	2
Di-n-butylphthalate	2	U ug/L	2	2	ug/L	2
Fluoranthene	2	U ug/L	2	2	U ug/L	2
Pyrene	2	U ug/L	2	2	U ug/L	2
Benzidine	50	U ug/L	50	50	U ug/L	50
Butylbenzylphthalate	2	U ug/L	2	2	U ug/L	2
3,3'-Dichlorobenzidine	20	U ug/L	20	20	U ug/L	20

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data January 1989

	Lab Sample Number: 14016-11 Project Sample Number: QA-1			Lab Sample Number: 14016-12 Project Sample Number: QA-2		
	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection
Benzo(a)anthracene	2	U	ug/L	2	2	U	ug/L	2
Chrysene	2	U	ug/L	2	2	U	ug/L	2
Bis(2-ethylhexyl)phthalate	3		ug/L	2	2	U	ug/L	2
Di-n-octylphthalate	2	U	ug/L	2	2	U	ug/L	2
Benzo(b)fluoranthene	4	U	ug/L	4	4	U	ug/L	4
Benzo(k)fluoranthene	4	U	ug/L	4	4	U	ug/L	4
Benzo(a)pyrene	4	U	ug/L	4	4	U	ug/L	4
Indeno(1,2,3-c,d)pyrene	4	U	ug/L	4	4	U	ug/L	4
Dibenzo(a,h)anthracene	4	U	ug/L	4	4	U	ug/L	4
Benzo(g,h,i)perylene	4	U	ug/L	4	4	U	ug/L	4

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	B1-1-15	B1-1-25	B1-2-15	B1-2-25
	Lab Sample No	15928-76	15928-77	15928-78	15928-79
	Matrix	SOIL	SOIL	SOIL	SOIL
	Assoc Sample(s)	EB-1, TB-1, FB-1	EB-1, TB-1, FB-1	EB-2 TB-2 FB-1	EB-2 TB-2 FB-1

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
EP TOXICITY METALS																
Arsenic	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2
Selenium	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2
Mercury	0.003		mg/L	0.002	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002
Silver	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Cadmium	0.01	U	mg/L	0.01	0.01	U	mg/L	0.01	0.01	U	mg/L	0.01	0.01	U	mg/L	0.01
Lead	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Chromium	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Barium	0.3		mg/L	0.1	0.4		mg/L	0.1	0.3		mg/L	0.1	0.3		mg/L	0.1
EP TOXICITY PESTICIDE/HERBICIDE COMPOUNDS																
Gamma-BHC (Lindane)	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05
Endrin	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1
Methoxychlor	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
Toxaphene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2,4-D	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2,4,5,-TP	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
INORGANICS																
Antimony	NT		mg/kg DB	2.5	NT		mg/kg DB	2.5	NT		mg/kg DB	2.5	NT		mg/kg DB	2.5
Thallium	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5
Lead	2.6		mg/kg DB	0.5	3.1		mg/kg DB	0.5	3.2		mg/kg DB	0.5	3.1		mg/kg DB	0.5
Arsenic	1.2		mg/kg DB	0.5	1.4		mg/kg DB	0.5	1.9		mg/kg DB	0.5	1.8		mg/kg DB	0.5
Selenium	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5
Mercury	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1
Silver	NT		mg/kg DB	0.6	NT		mg/kg DB	0.6	NT		mg/kg DB	0.6	NT		mg/kg DB	0.6
Copper	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1
Beryllium	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1
Nickel	NT		mg/kg DB	2	NT		mg/kg DB	2	NT		mg/kg DB	2	NT		mg/kg DB	2
Cadmium	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5
Chromium	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1
Zinc	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1
TPH OIL & GREASE	20	U	mg/kg DB	20	20	U	mg/kg DB	20	21		mg/kg DB	20	37		mg/kg DB	20
TOTAL ORGANIC CARBON	0.4		% DB	0.1	1.1		% DB	0.1	0.9		% DB	0.1	1.1		% DB	0.1
VOLATILE ORGANICS (BY GC/MS)																
Chloromethane	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
Bromomethane	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
Vinyl Chloride	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
Chloroethane	17	U	ug/kg DB	17	4	U	ug/kg DB	4	520	U	ug/kg DB	520	500	U	ug/kg DB	500
Methylene Chloride	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
Acetone	29	U	ug/kg DB	29	39		ug/kg DB	6	870	U	ug/kg DB	870	840	U	ug/kg DB	840
Carbon Disulfide	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
1,1-Dichlorcethene	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
1,1-Dichloroethane	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
1,2-Dichloroethene (total)	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No. : B1-1-15				Sample No. : B1-1-25				Sample No. : B1-2-15				Sample No. : B1-2-25			
	Lab Sample No : 15928-76				Lab Sample No : 15928-77				Lab Sample No : 15928-78				Lab Sample No : 15928-79			
	Matrix : SOIL				Matrix : SOIL				Matrix : SOIL				Matrix : SOIL			
	Assoc Sample() : EB-1, TB-1, FB-1				Assoc Sample() : EB-1, TB-1, FB-1				Assoc Sample(s) : EB-2 TB-2 FB-1				Assoc Sample() : EB-2 TB-2 FB-1			
	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Chloroform	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
1,2-Dichloroethane	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
2-Butanone	17	U	ug/kg DB	17	4	U	ug/kg DB	4	520	U	ug/kg DB	520	500	U	ug/kg DB	500
1,1,1-Trichloroethane	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
Carbon Tetrachloride	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
Vinyl Acetate	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
Bromodichloromethane	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
1,2-Dichloropropane	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
cis-1,3-Dichloropropene	17	U	ug/kg DB	17	4	U	ug/kg DB	4	520	U	ug/kg DB	520	500	U	ug/kg DB	500
Trichloroethene	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
Dibromochloromethane	17	U	ug/kg DB	17	4	U	ug/kg DB	4	520	U	ug/kg DB	520	500	U	ug/kg DB	500
1,1,2-Trichloroethane	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
Benzene	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
trans-1,3-Dichloropropene	17	U	ug/kg DB	6	4	U	ug/kg DB	4	520	U	ug/kg DB	520	500	U	ug/kg DB	500
Bromoform	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
4-Methyl-2-Pentanone	17	U	ug/kg DB	17	4	U	ug/kg DB	4	520	U	ug/kg DB	520	500	U	ug/kg DB	500
2-Hexanone	17	U	ug/kg DB	17	4	U	ug/kg DB	4	520	U	ug/kg DB	520	500	U	ug/kg DB	500
Tetrachloroethene	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
1,1,2,2-Tetrachloroethane	17	U	ug/kg DB	17	4	U	ug/kg DB	4	520	U	ug/kg DB	520	500	U	ug/kg DB	500
Toluene	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
Chlorobenzene	17	U	ug/kg DB	17	4	U	ug/kg DB	4	520	U	ug/kg DB	520	500	U	ug/kg DB	500
Ethylbenzene	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	920		ug/kg DB	170
Styrene	6	U	ug/kg DB	6	1	U	ug/kg DB	1	170	U	ug/kg DB	170	170	U	ug/kg DB	170
Total Xylenes	150		ug/kg DB	6	1	U	ug/kg DB	1	2,200		ug/kg DB	170	14,000		ug/kg DB	170
SEMI-VOLATILES (BY GC/MS)																
Phenol	38	U	ug/kg DB	38	38	U	ug/kg DB	38	23	J	ug/kg DB	40	39	U	ug/kg DB	39
Bis(2-chloroethyl)ether	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
2-Chlorophenol	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
1,3-Dichlorobenzene	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
1,4-Dichlorobenzene	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
Benzyl alcohol	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
1,2-Dichlorobenzene	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
2-Methylphenol	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
Bis(2-chloroisopropyl)ether	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
4-Methylphenol	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
N-Nitroso-di-n-propylamine	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
Hexachloroethane	76	U	ug/kg DB	76	76	U	ug/kg DB	76	79	U	ug/kg DB	79	78	U	ug/kg DB	78
Nitrobenzene	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
Isophorone	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
2-Nitrophenol	76	U	ug/kg DB	76	76	U	ug/kg DB	76	79	U	ug/kg DB	79	78	U	ug/kg DB	78
2,4-Dimethylphenol	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
Benzoic Acid	960	U	ug/kg DB	960	960	U	ug/kg DB	960	990	U	ug/kg DB	990	980	U	ug/kg DB	980
Bis(2-chloroethoxy)methane	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
2,4-Dichorophenol	76	U	ug/kg DB	76	76	U	ug/kg DB	76	79	U	ug/kg DB	79	78	U	ug/kg DB	78
1,2,4-Trichlorobenzene	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
Napthalene	89		ug/kg DB	76	37	J	ug/kg DB	76	330		ug/kg DB	79	650		ug/kg DB	78
4-Chloroaniline	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
Hexachlorobutadiene	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
4-Chloro-3-methylphenol	76	U	ug/kg DB	76	76	U	ug/kg DB	76	79	U	ug/kg DB	79	78	U	ug/kg DB	78

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	Lab Sample No	Matrix	Assoc Sample()	Sample No.	Lab Sample No	Matrix	Assoc Sample()	Sample No.	Lab Sample No	Matrix	Assoc Sample(s)	Sample No.	Lab Sample No	Matrix	Assoc Sample()
	B1-1-15	15928-76	SOIL	EB-1, TB-1, FB-1	B1-1-25	15928-77	SOIL	EB-1, TB-1, FB-1	B1-2-15	15928-78	SOIL	EB-2 TB-2 FB-1	B1-2-25	15928-79	SOIL	EB-2 TB-2 FB-1

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
2-Methylnapthalene	260		ug/kg DB	38	62		ug/kg DB	38	600		ug/kg DB	40	900		ug/kg DB	39
Hexachlorocyclopentadiene	76	U	ug/kg DB	76	76	U	ug/kg DB	76	79	U	ug/kg DB	79	78	U	ug/kg DB	78
2,4,6-Trichlorophenol	76	U	ug/kg DB	76	76	U	ug/kg DB	76	79	U	ug/kg DB	79	78	U	ug/kg DB	78
2,4,5-Trichlorophenol	76	U	ug/kg DB	76	76	U	ug/kg DB	76	79	U	ug/kg DB	79	78	U	ug/kg DB	78
2-Chloronapthalene	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
2-Nitroaniline	76	U	ug/kg DB	76	76	U	ug/kg DB	76	79	U	ug/kg DB	79	78	U	ug/kg DB	78
Dimethylphthalate	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
Acenaphthylene	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
2,6-Dinitrotoluene	76	U	ug/kg DB	76	76	U	ug/kg DB	76	79	U	ug/kg DB	79	78	U	ug/kg DB	78
3-Nitroaniline	190	U	ug/kg DB	190	190	U	ug/kg DB	190	200	U	ug/kg DB	200	200	U	ug/kg DB	200
Acenaphthene	250		ug/kg DB	38	74		ug/kg DB	38	77		ug/kg DB	40	130		ug/kg DB	39
2,4-Dinitrophenol	380	U	ug/kg DB	380	380	U	ug/kg DB	380	400	U	ug/kg DB	400	390	U	ug/kg DB	390
4-Nitrophenol	380	U	ug/kg DB	380	380	U	ug/kg DB	380	400	U	ug/kg DB	400	390	U	ug/kg DB	390
Dibenzofuran	130		ug/kg DB	38	45		ug/kg DB	38	46		ug/kg DB	40	81		ug/kg DB	39
2,4-Dinitrotoluene	76	U	ug/kg DB	76	76	U	ug/kg DB	76	79	U	ug/kg DB	79	78	U	ug/kg DB	78
Diethylphthalate	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
4-Chlorophenyl-phenylether	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
Fluorene	300		ug/kg DB	38	99		ug/kg DB	38	81		ug/kg DB	40	150		ug/kg DB	39
4-Nitroaniline	76	U	ug/kg DB	76	76	U	ug/kg DB	76	79	U	ug/kg DB	79	78	U	ug/kg DB	78
4,6-Dinitro-2-Methylphenol	380	U	ug/kg DB	380	380	U	ug/kg DB	380	400	U	ug/kg DB	400	390	U	ug/kg DB	390
N-Nitrosodiphenylamine(1)	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
4-Bromophenyl-phenylether	76	U	ug/kg DB	76	76	U	ug/kg DB	76	79	U	ug/kg DB	79	78	U	ug/kg DB	78
Hexachlorobenzene	76	U	ug/kg DB	76	76	U	ug/kg DB	76	79	U	ug/kg DB	79	78	U	ug/kg DB	78
Pentachlorophenol	380	U	ug/kg DB	380	380	U	ug/kg DB	380	400	U	ug/kg DB	400	390	U	ug/kg DB	390
Phenanthrene	1,900		ug/kg DB	38	650		ug/kg DB	38	360		ug/kg DB	40	630		ug/kg DB	39
Anthracene	490		ug/kg DB	38	170		ug/kg DB	38	110		ug/kg DB	40	210		ug/kg DB	39
Di-n-butylphthalate	10	J	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	9	J	ug/kg DB	39
Fluoranthene	1,500		ug/kg DB	38	430		ug/kg DB	38	360		ug/kg DB	40	690		ug/kg DB	39
Pyrene	1,600		ug/kg DB	38	510		ug/kg DB	38	530		ug/kg DB	40	770		ug/kg DB	39
Butylbenzylphthalate	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
3,3'-Dichlorobenzidine	380	U	ug/kg DB	380	380	U	ug/kg DB	380	400	U	ug/kg DB	400	390	U	ug/kg DB	390
Benzo(a)anthracene	690		ug/kg DB	38	220		ug/kg DB	38	150		ug/kg DB	40	330		ug/kg DB	39
Chrysene	640		ug/kg DB	38	220		ug/kg DB	38	180		ug/kg DB	40	320		ug/kg DB	39
Bis(2-ethylhexyl)phthalate	48		ug/kg DB	38	63	B	ug/kg DB	38	94		ug/kg DB	40	130		ug/kg DB	39
Di-n-octyl phthalate	38	U	ug/kg DB	38	38	U	ug/kg DB	38	40	U	ug/kg DB	40	39	U	ug/kg DB	39
Benzo(b)flouranthene	450		ug/kg DB	76	170		ug/kg DB	76	160		ug/kg DB	79	250		ug/kg DB	78
Benzo(k)flouranthene	370		ug/kg DB	76	110		ug/kg DB	76	100		ug/kg DB	79	160		ug/kg DB	78
Benzo(a)pyrene	460		ug/kg DB	76	170		ug/kg DB	76	140		ug/kg DB	79	230		ug/kg DB	78
Indeno(1,2,3-cd)pyrene	220		ug/kg DB	76	75	J	ug/kg DB	76	71	J	ug/kg DB	79	120		ug/kg DB	78
Dibenzo(a,h)anthracene	66	J	ug/kg DB	76	76	U	ug/kg DB	76	79	U	ug/kg DB	79	78	U	ug/kg DB	78
Benzo(g,h,i)perylene	180		ug/kg DB	76	62	J	ug/kg DB	76	58	J	ug/kg DB	79	98		ug/kg DB	78

(1) Cannot be separated from Diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	MW1-5-15	Sample No.	MW1-5-20	Sample No.	MW1-6-15	Sample No.	MW1-6-15D
	Lab Sample No	15928-92	Lab Sample No	15928-93	Lab Sample No	15928-94	Lab Sample No	15928-95
	Matrix	SOIL	Matrix	SOIL	Matrix	SOIL	Matrix	SOIL
	Assoc Sample()	EB-6, TB-3, FB-1	Assoc Sample()	EB-6, TB-3, FB-1	Assoc Sample(s)	EB-6, TB-3, FB-1	Assoc Sample()	EB-6, TB-3, FB-1

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
EP TOXICITY METALS																
Arsenic	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2
Selenium	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2
Mercury	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002
Silver	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Cadmium	0.01	U	mg/L	0.01	0.01	U	mg/L	0.01	0.01	U	mg/L	0.01	0.01	U	mg/L	0.01
Lead	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Chromium	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Barium	0.2		mg/L	0.1	0.3		mg/L	0.1	0.1		mg/L	0.1	0.1		mg/L	0.1
EP TOXICITY PESTICIDE/HERBICIDE COMPOUNDS																
Gamma-BHC (Lindane)	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05
Endrin	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1
Methoxychlor	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
Toxaphene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2,4-D	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2,4,5,-TP	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
INORGANICS																
Antimony	NT		mg/kg DB	2.5	NT		mg/kg DB	2.5	NT		mg/kg DB	2.5	NT		mg/kg DB	2.5
Thallium	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5
Lead	3.0		mg/kg DB	0.5	2.6		mg/kg DB	0.5	2.8		mg/kg DB	0.5	3.2		mg/kg DB	0.5
Arsenic	1.2		mg/kg DB	0.5	1.3		mg/kg DB	0.5	4.8		mg/kg DB	0.5	7.0		mg/kg DB	0.5
Selenium	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5
Mercury	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1
Silver	NT		mg/kg DB	0.6	NT		mg/kg DB	0.6	NT		mg/kg DB	0.6	NT		mg/kg DB	0.6
Copper	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1
Beryllium	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1
Nickel	NT		mg/kg DB	2	NT		mg/kg DB	2	NT		mg/kg DB	2	NT		mg/kg DB	2
Cadmium	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5
Chromium	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1
Zinc	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1
TPH OIL & GREASE	20	U	mg/kg DB	20	20	U	mg/kg DB	20	20	U	mg/kg DB	20	20	U	mg/kg DB	20
TOTAL ORGANIC CARBON	1.6		% DB	0.1	NT		% DB	0.1	NT		% DB	0.1	NT		% DB	0.1
VOLATILE ORGANICS (BY GC/MS)																
Chloromethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Bromomethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Vinyl Chloride	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Chloroethane	5	U	ug/kg DB	5	6	U	ug/kg DB	6	6	U	ug/kg DB	6	5	U	ug/kg DB	5
Methylene Chloride	4		ug/kg DB	2	7		ug/kg DB	2	8		ug/kg DB	2	3		ug/kg DB	2
Acetone	42		ug/kg DB	8	62		ug/kg DB	8	71		ug/kg DB	8	61		ug/kg DB	8
Carbon Disulfide	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1-Dichloroethene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1-Dichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloroethene (total)	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	MW1-5-15	MW1-5-20	MW1-6-15	MW1-6-15D
Sample No.	MW1-5-15	MW1-5-20	MW1-6-15	MW1-6-15D
Lab Sample No	15928-92	15928-93	15928-94	15928-95
Matrix	SOIL	SOIL	SOIL	SOIL
Assoc Sample(s)	EB-6, TB-3, FB-1	EB-6, TB-3, FB-1	EB-6, TB-3, FB-1	EB-6, TB-3, FB-1

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Chloroform	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
2-Butanone	5	U	ug/kg DB	5	6	U	ug/kg DB	6	6	U	ug/kg DB	6	5	U	ug/kg DB	5
1,1,1-Trichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Carbon Tetrachloride	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Vinyl Acetate	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Bromodichloromethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloropropane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
cis-1,3-Dichloropropene	5	U	ug/kg DB	5	6	U	ug/kg DB	6	6	U	ug/kg DB	6	5	U	ug/kg DB	5
Trichloroethene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Dibromochloromethane	5	U	ug/kg DB	5	6	U	ug/kg DB	6	6	U	ug/kg DB	6	5	U	ug/kg DB	5
1,1,2-Trichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Benzene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
trans-1,3-Dichloropropene	5	U	ug/kg DB	5	6	U	ug/kg DB	6	6	U	ug/kg DB	6	5	U	ug/kg DB	5
Bromoform	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
4-Methyl-2-Pentanone	5	U	ug/kg DB	5	6	U	ug/kg DB	6	6	U	ug/kg DB	6	5	U	ug/kg DB	5
2-Hexanone	5	U	ug/kg DB	5	6	U	ug/kg DB	6	6	U	ug/kg DB	6	5	U	ug/kg DB	5
Tetrachloroethene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1,2,2-Tetrachloroethane	5	U	ug/kg DB	5	6	U	ug/kg DB	6	6	U	ug/kg DB	6	5	U	ug/kg DB	5
Toluene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Chlorobenzene	5	U	ug/kg DB	5	6	U	ug/kg DB	6	6	U	ug/kg DB	6	5	U	ug/kg DB	5
Ethylbenzene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Styrene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Total Xylenes	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
SEMI-VOLATILES (BY GC/MS)																
Phenol	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Bis(2-chloroethyl)ether	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
2-Chlorophenol	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
1,3-Dichlorobenzene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
1,4-Dichlorobenzene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Benzyl alcohol	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
1,2-Dichlorobenzene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
2-Methylphenol	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Bis(2-chloroisopropyl)ether	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
4-Methylphenol	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
N-Nitroso-di-n-propylamine	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Hexachloroethane	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Nitrobenzene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Isophorone	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
2-Nitrophenol	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80
2,4-Dimethylphenol	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Benzoic Acid	990	U	ug/kg DB	990	980	U	ug/kg DB	980	970	U	ug/kg DB	970	1000	U	ug/kg DB	1000
Bis(2-chloroethoxy)methane	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
2,4-Dichorophenol	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80
1,2,4-Trichlorobenzene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Napthalene	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80
4-Chloroaniline	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Hexachlorobutadiene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
4-Chloro-3-methylphenol	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	MW1-5-15	Sample No.	MW1-5-20	Sample No.	MW1-6-15	Sample No.	MW1-6-15D
	Lab Sample No	15928-92	Lab Sample No	15928-93	Lab Sample No	15928-94	Lab Sample No	15928-95
	Matrix	SOIL	Matrix	SOIL	Matrix	SOIL	Matrix	SOIL
	Assoc Sample()	EB-6, TB-3, FB-1	Assoc Sample()	EB-6, TB-3, FB-1	Assoc Sample(s)	EB-6, TB-3, FB-1	Assoc Sample()	EB-6, TB-3, FB-1

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
2-Methylnapthalene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Hexachlorocyclopentadiene	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80
2,4,6-Trichlorophenol	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80
2,4,5-Trichlorophenol	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80
2-Chloronapthalene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
2-Nitroaniline	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Dimethylphthalate	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Acenaphthylene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
2,6-Dinitrotoluene	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80
3-Nitroaniline	200	U	ug/kg DB	200	200	U	ug/kg DB	200	190	U	ug/kg DB	190	200	U	ug/kg DB	200
Acenaphthene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
2,4-Dinitrophenol	400	U	ug/kg DB	400	390	U	ug/kg DB	390	390	U	ug/kg DB	390	400	U	ug/kg DB	400
4-Nitrophenol	400	U	ug/kg DB	400	390	U	ug/kg DB	390	390	U	ug/kg DB	390	400	U	ug/kg DB	400
Dibenzofuran	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
2,4-Dinitrotoluene	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Diethylphthalate	15	J	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
4-Chlorophenyl-phenylether	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Fluorene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
4-Nitroaniline	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80
4,6-Dinitro-2-Methylphenol	400	U	ug/kg DB	400	390	U	ug/kg DB	390	390	U	ug/kg DB	390	400	U	ug/kg DB	400
N-Nitrosodiphenylamine(1)	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
4-Bromophenyl-phenylether	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Hexachlorobenzene	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Pentachlorophenol	400	U	ug/kg DB	400	390	U	ug/kg DB	390	390	U	ug/kg DB	390	400	U	ug/kg DB	400
Phenanthrene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Anthracene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Di-n-butylphthalate	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Fluoranthene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Pyrene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Butylbenzylphthalate	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
3,3'-Dichlorobenzidine	400	U	ug/kg DB	400	390	U	ug/kg DB	390	390	U	ug/kg DB	390	400	U	ug/kg DB	400
Benzo(a)anthracene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Chrysene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Bis(2-ethylhexyl)phthalate	58	B	ug/kg DB	40	70	B	ug/kg DB	39	56	B	ug/kg DB	39	50	B	ug/kg DB	40
Di-n-octyl phthalate	40	U	ug/kg DB	40	39	U	ug/kg DB	39	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Benzo(b)flouranthene	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Benzo(k)flouranthene	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Benzo(a)pyrene	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Indeno(1,2,3-cd)pyrene	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Dibenzo(a,h)anthracene	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Benzo(g,h,i)perylene	79	U	ug/kg DB	79	78	U	ug/kg DB	78	77	U	ug/kg DB	77	80	U	ug/kg DB	80

(1) Cannot be separated from Diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	MW1-6-20				MW1-7-15				MW1-7-20				MW1-8-15			
	Lab Sample No	15928-96				15928-97				15928-98				15928-99			
	Matrix	SOIL				SOIL				SOIL				SOIL			
	Assoc Sample()	EB-6, TB-3, FB-1,				EB-7, TB-3, FB-1,				EB-7, TB-3, FB-1,				EB-7, TB-3, FB-1,			
		Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
EP TOXICITY METALS																	
Arsenic		0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2
Selenium		0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2
Mercury		0.002	U	mg/L	0.002	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002
Silver		0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Cadmium		0.31		mg/L	0.01	0.01	U	mg/L	0.01	0.02		mg/L	0.01	0.01	U	mg/L	0.01
Lead		0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Chromium		0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Barium		0.2		mg/L	0.1	0.2		mg/L	0.1	0.2		mg/L	0.1	0.2		mg/L	0.1
EP TOXICITY PESTICIDE/HERBICIDE COMPOUNDS																	
Gamma-BHC (Lindane)		0.05	U	ug/L	0.05	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05
Endrin		0.1	U	ug/L	0.1	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1
Methoxychlor		0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
Toxaphene		1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2,4-D		4.6		ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2,4,5,-TP		0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
INORGANICS																	
Antimony		NT		mg/kg DB	2.5	NT		mg/kg DB	2.5	NT		mg/kg DB	2.5	NT		mg/kg DB	2.5
Thallium		NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5
Lead		2.2		mg/kg DB	0.5	2.9		mg/kg DB	0.5	2.2		mg/kg DB	0.5	2.2		mg/kg DB	0.5
Arsenic		5.7		mg/kg DB	0.5	4.1		mg/kg DB	0.5	3.4		mg/kg DB	0.5	4.9		mg/kg DB	0.5
Selenium		NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5
Mercury		NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1
Silver		NT		mg/kg DB	0.6	NT		mg/kg DB	0.6	NT		mg/kg DB	0.6	NT		mg/kg DB	0.6
Copper		NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1
Beryllium		NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1
Nickel		NT		mg/kg DB	2	NT		mg/kg DB	2	NT		mg/kg DB	2	NT		mg/kg DB	2
Cadmium		NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5
Chromium		NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1
Zinc		NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1
TPH OIL & GREASE		20	U	mg/kg DB	20	20	U	mg/kg DB	20	20	U	mg/kg DB	20	20	U	mg/kg DB	20
TOTAL ORGANIC CARBON		1.6		% DB	0.1	1.6		% DB	0.1	NT		% DB	0.1	NT		% DB	0.1
VOLATILE ORGANICS (BY GC/MS)																	
Chloromethane		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
Bromomethane		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
Vinyl Chloride		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
Chloroethane		5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	17	U	ug/kg DB	17
Methylene Chloride		3		ug/kg DB	2	4		ug/kg DB	2	3		ug/kg DB	2	6	U	ug/kg DB	6
Acetone		36		ug/kg DB	8	62		ug/kg DB	8	57		ug/kg DB	8	97		ug/kg DB	30
Carbon Disulfide		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
1,1-Dichloroethene		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
1,1-Dichloroethane		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
1,2-Dichloroethene (total)		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	MW1-6-20	MW1-7-15	MW1-7-20	MW1-8-15
	Lab Sample No	15928-96	15928-97	15928-98	15928-99
	Matrix	SOIL	SOIL	SOIL	SOIL
	Assoc Sample()	EB-6, TB-3, FB-1,	EB-7, TB-3, FB-1,	EB-7, TB-3, FB-1,	EB-7, TB-3, FB-1,

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Chloroform	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
1,2-Dichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
2-Butanone	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	17	U	ug/kg DB	17
1,1,1-Trichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
Carbon Tetrachloride	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
Vinyl Acetate	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
Bromodichloromethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
1,2-Dichloropropane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
cis-1,3-Dichloropropene	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	17	U	ug/kg DB	17
Trichloroethene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
Dibromochloromethane	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	17	U	ug/kg DB	17
1,1,2-Trichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
Benzene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
trans-1,3-Dichloroprcpene	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	17	U	ug/kg DB	17
Bromoform	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
4-Methyl-2-Pentanone	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	17	U	ug/kg DB	17
2-Hexanone	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	17	U	ug/kg DB	17
Tetrachloroethene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
1,1,2,2-Tetrachloroethane	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	17	U	ug/kg DB	17
Toluene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
Chlorobenzene	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	17	U	ug/kg DB	17
Ethylbenzene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
Styrene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
Total Xylenes	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	6	U	ug/kg DB	6
SEMI-VOLATILES (BY GC/MS)																
Phenol	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Bis(2-chloroethyl)ether	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2-Chlorophenol	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
1,3-Dichlorobenzene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
1,4-Dichlorobenzene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Benzyl alcohol	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
1,2-Dichlorobenzene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2-Methylphenol	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Bis(2-chloroisopropyl)ether	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
4-Methylphenol	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
N-Nitroso-di-n-propylamine	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Hexachloroethane	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77
Nitrobenzene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Isophorone	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2-Nitrophenol	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77
2,4-Dimethylphenol	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Benzoic Acid	970	U	ug/kg DB	970	970	U	ug/kg DB	970	960	U	ug/kg DB	960	960	U	ug/kg DB	960
Bis(2-chloroethoxy)methane	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2,4-Dichorophenol	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77
1,2,4-Trichlorobenzene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Napthalene	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77
4-Chloroaniline	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Hexachlorobutadiene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
4-Chloro-3-methylphenol	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No. : MW1-6-20				Sample No. : MW1-7-15				Sample No. : MW1-7-20				Sample No. : MW1-8-15			
	Lab Sample No : 15928-96				Lab Sample No : 15928-97				Lab Sample No : 15928-98				Lab Sample No : 15928-99			
	Matrix : SOIL				Matrix : SOIL				Matrix : SOIL				Matrix : SOIL			
	Assoc Sample() : EB-6, TB-3, FB-1,				Assoc Sample() : EB-7, TB-3, FB-1,				Assoc Sample(s) : EB-7, TB-3, FB-1,				Assoc Sample() : EB-7, TB-3, FB-1,			
	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
2-Methylnapthalene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Hexachlorocyclopentadiene	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77
2,4,6-Trichlorophenol	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77
2,4,5-Trichlorophenol	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77
2-Chloronapthalene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2-Nitroaniline	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77
Dimethylphthalate	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Acenaphthylene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2,6-Dinitrotoluene	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77
3-Nitroaniline	190	U	ug/kg DB	190	190	U	ug/kg DB	190	190	U	ug/kg DB	190	190	U	ug/kg DB	190
Acenaphthene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2,4-Dinitrophenol	390	U	ug/kg DB	390	390	U	ug/kg DB	390	380	U	ug/kg DB	380	390	U	ug/kg DB	390
4-Nitrophenol	390	U	ug/kg DB	390	390	U	ug/kg DB	390	380	U	ug/kg DB	380	390	U	ug/kg DB	390
Dibenzofuran	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2,4-Dinitrotoluene	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77
Diethylphthalate	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
4-Chlorophenyl-phenylether	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Fluorene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	23	J	ug/kg DB	39
4-Nitroaniline	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77
4,6-Dinitro-2-Methylphenol	390	U	ug/kg DB	390	390	U	ug/kg DB	390	380	U	ug/kg DB	380	390	U	ug/kg DB	390
N-Nitrosodiphenylamine(1)	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
4-Bromophenyl-phenylether	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77
Hexachlorobenzene	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77
Pentachlorophenol	390	U	ug/kg DB	390	390	U	ug/kg DB	390	380	U	ug/kg DB	380	390	U	ug/kg DB	390
Phenanthrene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Anthracene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Di-n-butylphthalate	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Fluoranthene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Pyrene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Butylbenzylphthalate	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
3,3'-Dichlorobenzidine	390	U	ug/kg DB	390	390	U	ug/kg DB	390	380	U	ug/kg DB	380	390	U	ug/kg DB	390
Benzo(a)anthracene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Chrysene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Bis(2-ethylhexyl)phthalate	59	B	ug/kg DB	39	62	B	ug/kg DB	39	56	B	ug/kg DB	38	53	B	ug/kg DB	39
Di-n-octyl phthalate	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Benzo(b)flouranthene	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77
Benzo(k)flouranthene	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77
Benzo(a)pyrene	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77
Indeno(1,2,3-cd)pyrene	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77
Dibenzo(a,h)anthracene	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77
Benzo(g,h,i)perylene	77	U	ug/kg DB	77	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77

(1) Cannot be separated from Diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No. :	MW1-8-20				Sample No. :	MW1-9-15				Sample No. :	MW1-9-20				Sample No. :	MW1-10-15			
	Lab Sample No :	15928-100				Lab Sample No :	15928-101				Lab Sample No :	15928-102				Lab Sample No :	15928-103			
	Matrix :	SOIL				Matrix :	SOIL				Matrix :	SOIL				Matrix :	SOIL			
	Assoc Sample() :	EB-7, TB-3, FB-1				Assoc Sample() :	EB-8, TB-4, FB-2				Assoc Sample(s) :	EB-8, TB-4, FB-2				Assoc Sample() :	EB-9, TB-4, FB-2			
		Test Result	Flag	Unit	LLD		Test Result	Flag	Unit	LLD		Test Result	Flag	Unit	LLD		Test Result	Flag	Unit	LLD
EP TOXICITY METALS																				
Arsenic		0.2	U	mg/L	0.2		0.2	U	mg/L	0.2		0.2	U	mg/L	0.2		0.2	U	mg/L	0.2
Selenium		0.2	U	mg/L	0.2		0.2	U	mg/L	0.2		0.2	U	mg/L	0.2		0.2	U	mg/L	0.2
Mercury		0.002	U	mg/L	0.002		0.002	U	mg/L	0.002		0.002	U	mg/L	0.002		0.002	U	mg/L	0.002
Silver		0.1	U	mg/L	0.1		0.1	U	mg/L	0.1		0.1	U	mg/L	0.1		0.1	U	mg/L	0.1
Cadmium		0.01	U	mg/L	0.01		0.01	U	mg/L	0.01		0.01	U	mg/L	0.01		0.01	U	mg/L	0.01
Lead		0.1	U	mg/L	0.1		0.1	U	mg/L	0.1		0.1	U	mg/L	0.1		0.1	U	mg/L	0.1
Chromium		0.1	U	mg/L	0.1		0.1	U	mg/L	0.1		0.1	U	mg/L	0.1		0.1	U	mg/L	0.1
Barium		0.1		mg/L	0.1		0.2		mg/L	0.1		0.2		mg/L	0.1		0.2		mg/L	0.1
EP TOXICITY PESTICIDE/HERBICIDE COMPOUNDS																				
Gamma-BHC (Lindane)		0.05	U	ug/L	0.05		0.05	U	ug/L	0.05		0.05	U	ug/L	0.05		0.05	U	ug/L	0.05
Endrin		0.1	U	ug/L	0.1		0.1	U	ug/L	0.1		0.1	U	ug/L	0.1		0.1	U	ug/L	0.1
Methoxychlor		0.5	U	ug/L	0.5		0.5	U	ug/L	0.5		0.5	U	ug/L	0.5		0.5	U	ug/L	0.5
Toxaphene		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1
2,4-D		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1
2,4,5,-TP		0.5	U	ug/L	0.5		0.5	U	ug/L	0.5		0.5	U	ug/L	0.5		0.5	U	ug/L	0.5
INORGANICS																				
Antimony		NT		mg/kg DB	2.5		NT		mg/kg DB	2.5		NT		mg/kg DB	2.5		NT		mg/kg DB	2.5
Thallium		NT		mg/kg DB	0.5		NT		mg/kg DB	0.5		NT		mg/kg DB	0.5		NT		mg/kg DB	0.5
Lead		2.2		mg/kg DB	0.5		2.8		mg/kg DB	0.5		2.6		mg/kg DB	0.5		3.3		mg/kg DB	0.5
Arsenic		5.3		mg/kg DB	0.5		2.4		mg/kg DB	0.5		2.6		mg/kg DB	0.5		2.2		mg/kg DB	0.5
Selenium		NT		mg/kg DB	0.5		NT		mg/kg DB	0.5		NT		mg/kg DB	0.5		NT		mg/kg DB	0.5
Mercury		NT		mg/kg DB	0.1		NT		mg/kg DB	0.1		NT		mg/kg DB	0.1		NT		mg/kg DB	0.1
Silver		NT		mg/kg DB	0.6		NT		mg/kg DB	0.6		NT		mg/kg DB	0.6		NT		mg/kg DB	0.6
Copper		NT		mg/kg DB	1		NT		mg/kg DB	1		NT		mg/kg DB	1		NT		mg/kg DB	1
Beryllium		NT		mg/kg DB	0.1		NT		mg/kg DB	0.1		NT		mg/kg DB	0.1		NT		mg/kg DB	0.1
Nickel		NT		mg/kg DB	2		NT		mg/kg DB	2		NT		mg/kg DB	2		NT		mg/kg DB	2
Cadmium		NT		mg/kg DB	0.5		NT		mg/kg DB	0.5		NT		mg/kg DB	0.5		NT		mg/kg DB	0.5
Chromium		NT		mg/kg DB	1		NT		mg/kg DB	1		NT		mg/kg DB	1		NT		mg/kg DB	1
Zinc		NT		mg/kg DB	1		NT		mg/kg DB	1		NT		mg/kg DB	1		NT		mg/kg DB	1
TPH OIL & GREASE		20	U	mg/kg DB	20		20	U	mg/kg DB	20		20	U	mg/kg DB	20		20	U	mg/kg DB	20
TOTAL ORGANIC CARBON		1.1		% DB	0.1		NT		% DB	0.1		1.5		% DB	0.1		NT		% DB	0.1
VOLATILE ORGANICS (BY GC/MS)																				
Chloromethane		2	U	ug/kg DB	2		2	U	ug/kg DB	2		2	U	ug/kg DB	2		2	U	ug/kg DB	2
Bromomethane		2	U	ug/kg DB	2		2	U	ug/kg DB	2		2	U	ug/kg DB	2		2	U	ug/kg DB	2
Vinyl Chloride		2	U	ug/kg DB	2		2	U	ug/kg DB	2		2	U	ug/kg DB	2		2	U	ug/kg DB	2
Chloroethane		6	U	ug/kg DB	6		5	U	ug/kg DB	5		5	U	ug/kg DB	5		5	U	ug/kg DB	5
Methylene Chloride		5		ug/kg DB	2		8		ug/kg DB	2		6		ug/kg DB	2		6		ug/kg DB	2
Acetone		49		ug/kg DB	10		8	U	ug/kg DB	8		32		ug/kg DB	9		9	U	ug/kg DB	9
Carbon Disulfide		2	U	ug/kg DB	2		2	U	ug/kg DB	2		2	U	ug/kg DB	2		2	U	ug/kg DB	2
1,1-Dichloroethene		2	U	ug/kg DB	2		2	U	ug/kg DB	2		2	U	ug/kg DB	2		2	U	ug/kg DB	2
1,1-Dichloroethane		2	U	ug/kg DB	2		2	U	ug/kg DB	2		2	U	ug/kg DB	2		2	U	ug/kg DB	2
1,2-Dichloroethene (total)		2	U	ug/kg DB	2		2	U	ug/kg DB	2		2	U	ug/kg DB	2		2	U	ug/kg DB	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

Sample No.	:	MW1-8-20				Sample No.	:	MW1-9-15				Sample No.	:	MW1-9-20			
Lab Sample No	:	15928-100				Lab Sample No	:	15928-101				Lab Sample No	:	15928-102			
Matrix	:	SOIL				Matrix	:	SOIL				Matrix	:	SOIL			
Assoc Sample()	:	EB-7, TB-3, FB-1				Assoc Sample()	:	EB-8, TB-4, FB-2				Assoc Sample(s)	:	EB-8, TB-4, FB-2			
		Test Result	Flag	Unit	LLD			Test Result	Flag	Unit	LLD			Test Result	Flag	Unit	LLD
Chloroform		2	U	ug/kg DB	2			2	U	ug/kg DB	2			2	U	ug/kg DB	2
1,2-Dichloroethane		2	U	ug/kg DB	2			2	U	ug/kg DB	2			2	U	ug/kg DB	2
2-Butanone		6	U	ug/kg DB	6			5	U	ug/kg DB	5			5	U	ug/kg DB	5
1,1,1-Trichloroethane		2	U	ug/kg DB	2			2	U	ug/kg DB	2			2	U	ug/kg DB	2
Carbon Tetrachloride		2	U	ug/kg DB	2			2	U	ug/kg DB	2			2	U	ug/kg DB	2
Vinyl Acetate		2	U	ug/kg DB	2			2	U	ug/kg DB	2			2	U	ug/kg DB	2
Bromodichloromethane		2	U	ug/kg DB	2			2	U	ug/kg DB	2			2	U	ug/kg DB	2
1,2-Dichloropropane		2	U	ug/kg DB	2			2	U	ug/kg DB	2			2	U	ug/kg DB	2
cis-1,3-Dichloropropene		6	U	ug/kg DB	6			5	U	ug/kg DB	5			5	U	ug/kg DB	5
Trichloroethene		2	U	ug/kg DB	2			2	U	ug/kg DB	2			2	U	ug/kg DB	2
Dibromochloromethane		6	U	ug/kg DB	6			5	U	ug/kg DB	5			5	U	ug/kg DB	5
1,1,2-Trichloroethane		2	U	ug/kg DB	2			2	U	ug/kg DB	2			2	U	ug/kg DB	2
Benzene		2	U	ug/kg DB	2			2	U	ug/kg DB	2			2	U	ug/kg DB	2
trans-1,3-Dichloropropene		6	U	ug/kg DB	6			5	U	ug/kg DB	5			5	U	ug/kg DB	5
Bromoform		2	U	ug/kg DB	2			2	U	ug/kg DB	2			2	U	ug/kg DB	2
4-Methyl-2-Pentanone		6	U	ug/kg DB	6			5	U	ug/kg DB	5			5	U	ug/kg DB	5
2-Hexanone		6	U	ug/kg DB	6			5	U	ug/kg DB	5			5	U	ug/kg DB	5
Tetrachloroethene		2	U	ug/kg DB	2			2	U	ug/kg DB	2			2	U	ug/kg DB	2
1,1,2,2-Tetrachloroethane		6	U	ug/kg DB	6			5	U	ug/kg DB	5			5	U	ug/kg DB	5
Toluene		2	U	ug/kg DB	2			2	U	ug/kg DB	2			2	U	ug/kg DB	2
Chlorobenzene		6	U	ug/kg DB	6			5	U	ug/kg DB	5			5	U	ug/kg DB	5
Ethylbenzene		2	U	ug/kg DB	2			2	U	ug/kg DB	2			2	U	ug/kg DB	2
Styrene		2	U	ug/kg DB	2			2	U	ug/kg DB	2			2	U	ug/kg DB	2
Total Xylenes		2	U	ug/kg DB	2			2	U	ug/kg DB	2			2	U	ug/kg DB	2
SEMI-VOLATILES (BY GC/MS)																	
Phenol		66		ug/kg DB	39			38	U	ug/kg DB	38			39	U	ug/kg DB	39
Bis(2-chloroethyl)ether		39	U	ug/kg DB	39			38	U	ug/kg DB	38			39	U	ug/kg DB	39
2-Chlorophenol		39	U	ug/kg DB	39			38	U	ug/kg DB	38			39	U	ug/kg DB	39
1,3-Dichlorobenzene		39	U	ug/kg DB	39			38	U	ug/kg DB	38			39	U	ug/kg DB	39
1,4-Dichlorobenzene		39	U	ug/kg DB	39			38	U	ug/kg DB	38			39	U	ug/kg DB	39
Benzyl alcohol		39	U	ug/kg DB	39			38	U	ug/kg DB	38			39	U	ug/kg DB	39
1,2-Dichlorobenzene		39	U	ug/kg DB	39			38	U	ug/kg DB	38			39	U	ug/kg DB	39
2-Methylphenol		39	U	ug/kg DB	39			38	U	ug/kg DB	38			39	U	ug/kg DB	39
Bis(2-chloroisopropyl)ether		39	U	ug/kg DB	39			38	U	ug/kg DB	38			39	U	ug/kg DB	39
4-Methylphenol		39	U	ug/kg DB	39			38	U	ug/kg DB	38			39	U	ug/kg DB	39
N-Nitroso-di-n-propylamine		39	U	ug/kg DB	39			38	U	ug/kg DB	38			39	U	ug/kg DB	39
Hexachloroethane		77	U	ug/kg DB	77			76	U	ug/kg DB	76			77	U	ug/kg DB	77
Nitrobenzene		39	U	ug/kg DB	39			38	U	ug/kg DB	38			39	U	ug/kg DB	39
Isophorone		39	U	ug/kg DB	39			38	U	ug/kg DB	38			39	U	ug/kg DB	39
2-Nitrophenol		77	U	ug/kg DB	77			76	U	ug/kg DB	76			77	U	ug/kg DB	77
2,4-Dimethylphenol		39	U	ug/kg DB	39			38	U	ug/kg DB	38			39	U	ug/kg DB	39
Benzoic Acid		960	U	ug/kg DB	960			950	U	ug/kg DB	950			970	U	ug/kg DB	970
Bis(2-chloroethoxy)methane		39	U	ug/kg DB	39			38	U	ug/kg DB	38			39	U	ug/kg DB	39
2,4-Dichorophenol		77	U	ug/kg DB	77			76	U	ug/kg DB	76			77	U	ug/kg DB	77
1,2,4-Trichlorobenzene		39	U	ug/kg DB	39			38	U	ug/kg DB	38			39	U	ug/kg DB	39
Napthalene		77	U	ug/kg DB	77			76	U	ug/kg DB	76			77	U	ug/kg DB	77
4-Chloroaniline		39	U	ug/kg DB	39			38	U	ug/kg DB	38			39	U	ug/kg DB	39
Hexachlorobutadiene		39	U	ug/kg DB	39			38	U	ug/kg DB	38			39	U	ug/kg DB	39
4-Chloro-3-methylphenol		77	U	ug/kg DB	77			76	U	ug/kg DB	76			77	U	ug/kg DB	77

Sample No.	:	MW1-10-15														
Lab Sample No	:	15928-103														
Matrix	:	SOIL														
Assoc Sample()	:	EB-9, TB-4, FB-2														
		Test Result	Flag	Unit	LLD											
Chloroform		2	U	ug/kg DB	2											
1,2-Dichloroethane		2	U	ug/kg DB	2											
2-Butanone		5	U	ug/kg DB	5											
1,1,1-Trichloroethane		2	U	ug/kg DB	2											
Carbon Tetrachloride		2	U	ug/kg DB	2											
Vinyl Acetate		2	U	ug/kg DB	2											
Bromodichloromethane		2	U	ug/kg DB	2											
1,2-Dichloropropane		2	U	ug/kg DB	2											
cis-1,3-Dichloropropene		5	U	ug/kg DB	5											
Trichloroethene		2	U	ug/kg DB	2											
Dibromochloromethane		5	U	ug/kg DB	5											
1,1,2-Trichloroethane		2	U	ug/kg DB	2											
Benzene		2	U	ug/kg DB	2											
trans-1,3-Dichloropropene		5	U	ug/kg DB	5											
Bromoform		2	U	ug/kg DB	2											
4-Methyl-2-Pentanone		5	U	ug/kg DB	5											
2-Hexanone		5	U	ug/kg DB	5											
Tetrachloroethene		2	U	ug/kg DB	2											
1,1,2,2-Tetrachloroethane		5	U	ug/kg DB	5											
Toluene		2	U	ug/kg DB	2											
Chlorobenzene		5	U	ug/kg DB	5											
Ethylbenzene		2	U	ug/kg DB	2											
Styrene		2	U	ug/kg DB	2											
Total Xylenes		2	U	ug/kg DB	2											
SEMI-VOLATILES (BY GC/MS)																
Phenol		40	U	ug/kg DB	40											
Bis(2-chloroethyl)ether		40	U	ug/kg DB	40											
2-Chlorophenol		40	U	ug/kg DB	40											
1,3-Dichlorobenzene		40	U	ug/kg DB	40											
1,4-Dichlorobenzene		40	U	ug/kg DB	40											
Benzyl alcohol		40	U	ug/kg DB	40											
1,2-Dichlorobenzene		40	U	ug/kg DB	40											
2-Methylphenol		40	U	ug/kg DB	40											
Bis(2-chloroisopropyl)ether		40	U	ug/kg DB	40											
4-Methylphenol		40	U	ug/kg DB	40											
N-Nitroso-di-n-propylamine		40	U	ug/kg DB	40											
Hexachloroethane		80	U	ug/kg DB	80											
Nitrobenzene		40	U	ug/kg DB	40											
Isophorone		40	U	ug/kg DB	40											
2-Nitrophenol		80	U	ug/kg DB	80											
2,4-Dimethylphenol		40	U	ug/kg DB	40											
Benzoic Acid		1000	U	ug/kg DB	1000											
Bis(2-chloroethoxy)methane		40	U	ug/kg DB	40											
2,4-Dichorophenol		80	U	ug/kg DB	80											
1,2,4-Trichlorobenzene		40	U	ug/kg DB	40											
Napthalene		80	U	ug/kg DB	80											
4-Chloroaniline		40	U	ug/kg DB	40											
Hexachlorobutadiene		40	U	ug/kg DB	40											
4-Chloro-3-methylphenol		80	U	ug/kg DB	80											

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

Sample No.	: MW1-8-20	Sample No.	: MW1-9-15	Sample No.	: MW1-9-20	Sample No.	: MW1-10-15
Lab Sample No	: 15928-100	Lab Sample No	: 15928-101	Lab Sample No	: 15928-102	Lab Sample No	: 15928-103
Matrix	: SOIL	Matrix	: SOIL	Matrix	: SOIL	Matrix	: SOIL
Assoc Sample()	: EB-7, TB-3, FB-1	Assoc Sample()	: EB-8, TB-4, FB-2	Assoc Sample(s)	: EB-8, TB-4, FB-2	Assoc Sample()	: EB-9, TB-4, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
2-Methylnapthalene	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Hexachlorocyclopentadiene	77	U	ug/kg DB	77	76	U	ug/kg DB	76	77	U	ug/kg DB	77	80	U	ug/kg DB	80
2,4,6-Trichlorophenol	77	U	ug/kg DB	77	76	U	ug/kg DB	76	77	U	ug/kg DB	77	80	U	ug/kg DB	80
2,4,5-Trichlorophenol	77	U	ug/kg DB	77	76	U	ug/kg DB	76	77	U	ug/kg DB	77	80	U	ug/kg DB	80
2-Chloronapthalene	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
2-Nitroaniline	77	U	ug/kg DB	77	76	U	ug/kg DB	76	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Dimethylphthalate	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Acenaphthylene	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
2,6-Dinitrotoluene	77	U	ug/kg DB	77	76	U	ug/kg DB	76	77	U	ug/kg DB	77	80	U	ug/kg DB	80
3-Nitroaniline	190	U	ug/kg DB	190	190	U	ug/kg DB	190	190	U	ug/kg DB	190	200	U	ug/kg DB	200
Acenaphthene	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
2,4-Dinitrophenol	390	U	ug/kg DB	390	380	U	ug/kg DB	380	390	U	ug/kg DB	390	400	U	ug/kg DB	400
4-Nitrophenol	390	U	ug/kg DB	390	380	U	ug/kg DB	380	390	U	ug/kg DB	390	400	U	ug/kg DB	400
Dibenzofuran	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
2,4-Dinitrotoluene	77	U	ug/kg DB	77	76	U	ug/kg DB	76	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Diethylphthalate	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
4-Chlorophenyl-phenylether	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Fluorene	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
4-Nitroaniline	77	U	ug/kg DB	77	76	U	ug/kg DB	76	77	U	ug/kg DB	77	80	U	ug/kg DB	80
4,6-Dinitro-2-Methylphenol	390	U	ug/kg DB	390	380	U	ug/kg DB	380	390	U	ug/kg DB	390	400	U	ug/kg DB	400
N-Nitrosodiphenylamine(1)	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
4-Bromophenyl-phenylether	77	U	ug/kg DB	77	76	U	ug/kg DB	76	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Hexachlorobenzene	77	U	ug/kg DB	77	76	U	ug/kg DB	76	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Pentachlorophenol	390	U	ug/kg DB	390	380	U	ug/kg DB	380	390	U	ug/kg DB	390	400	U	ug/kg DB	400
Phenanthrene	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Anthracene	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Di-n-butylphthalate	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Fluoranthene	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Pyrene	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Butylbenzylphthalate	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
3,3'-Dichlorobenzidine	390	U	ug/kg DB	390	380	U	ug/kg DB	380	390	U	ug/kg DB	390	400	U	ug/kg DB	400
Benzo(a)anthracene	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Chrysene	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Bis(2-ethylhexyl)phthalate	58	B	ug/kg DB	39	27	J	ug/kg DB	38	39		ug/kg DB	39	34	J	ug/kg DB	40
Di-n-octyl phthalate	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39	40	U	ug/kg DB	40
Benzo(b)flouranthene	77	U	ug/kg DB	77	76	U	ug/kg DB	76	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Benzo(k)flouranthene	77	U	ug/kg DB	77	76	U	ug/kg DB	76	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Benzo(a)pyrene	77	U	ug/kg DB	77	76	U	ug/kg DB	76	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Indeno(1,2,3-cd)pyrene	77	U	ug/kg DB	77	76	U	ug/kg DB	76	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Dibenzo(a,h)anthracene	77	U	ug/kg DB	77	76	U	ug/kg DB	76	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Benzo(g,h,i)perylene	77	U	ug/kg DB	77	76	U	ug/kg DB	76	77	U	ug/kg DB	77	80	U	ug/kg DB	80

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	MW1-10-15D	Sample No.	MW1-10-20	Sample No.	MW1-11-15	Sample No.	MW1-11-20
	Lab Sample No	15928-104	Lab Sample No	15928-105	Lab Sample No	15928-106	Lab Sample No	15928-107
	Matrix	SOIL	Matrix	SOIL	Matrix	SOIL	Matrix	SOIL
	Assoc Sample()	EB-9, TB-4, FB-2	Assoc Sample()	EB-9, TB-4, FB-2	Assoc Sample(s)	EB-9, TB-4, FB-2	Assoc Sample()	EB-9, TB-4, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
EP TOXICITY METALS																
Arsenic	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2
Selenium	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2
Mercury	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002
Silver	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Cadmium	0.01	U	mg/L	0.01	0.01	U	mg/L	0.01	0.01	U	mg/L	0.01	0.01	U	mg/L	0.01
Lead	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Chromium	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Barium	0.2		mg/L	0.1	0.2		mg/L	0.1	0.1	U	mg/L	0.1	0.3		mg/L	0.1
EP TOXICITY PESTICIDE/HERBICIDE COMPOUNDS																
Gamma-BHC (Lindane)	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05
Endrin	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1
Methoxychlor	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
Toxaphene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2,4-D	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2,4,5,-TP	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
INORGANICS																
Antimony	NT		mg/kg DB	2.5	NT		mg/kg DB	2.5	NT		mg/kg DB	2.5	NT		mg/kg DB	2.5
Thallium	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5
Lead	3.0		mg/kg DB	0.5	2.5		mg/kg DB	0.5	2.6		mg/kg DB	0.5	2.4		mg/kg DB	0.5
Arsenic	2.2		mg/kg DB	0.5	1.6		mg/kg DB	0.5	4.4		mg/kg DB	0.5	3.8		mg/kg DB	0.5
Selenium	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5
Mercury	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1
Silver	NT		mg/kg DB	0.6	NT		mg/kg DB	0.6	NT		mg/kg DB	0.6	NT		mg/kg DB	0.6
Copper	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1
Beryllium	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1
Nickel	NT		mg/kg DB	2	NT		mg/kg DB	2	NT		mg/kg DB	2	NT		mg/kg DB	2
Cadmium	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5
Chromium	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1
Zinc	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1
TPH OIL & GREASE	20	U	mg/kg DB	20	20	U	mg/kg DB	20	34		mg/kg DB	20	190		mg/kg DB	20
TOTAL ORGANIC CARBON	NT		% DB	0.1	0.9		% DB	0.1	NT		% DB	0.1	1.1		% DB	0.1
VOLATILE ORGANICS (BY GC/MS)																
Chloromethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Bromomethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Vinyl Chloride	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Chloroethane	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Methylene Chloride	6		ug/kg DB	2	6		ug/kg DB	2	5		ug/kg DB	2	4		ug/kg DB	2
Acetone	9	U	ug/kg DB	9	39		ug/kg DB	9	58		ug/kg DB	8	54		ug/kg DB	8
Carbon Disulfide	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1-Dichloroethene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1-Dichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloroethene (total)	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No. : MW1-10-15D Lab Sample No : 15928-104 Matrix : SOIL Assoc Sample() : EB-9, TB-4, FB-2				Sample No. : MW1-10-20 Lab Sample No : 15928-105 Matrix : SOIL Assoc Sample() : EB-9, TB-4, FB-2				Sample No. : MW1-11-15 Lab Sample No : 15928-106 Matrix : SOIL Assoc Sample(s) : EB-9, TB-4, FB-2				Sample No. : MW1-11-20 Lab Sample No : 15928-107 Matrix : SOIL Assoc Sample() : EB-9, TB-4, FB-2			
	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Chloroform	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
2-Butanone	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
1,1,1-Trichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Carbon Tetrachloride	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Vinyl Acetate	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Bromodichloromethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloropropane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
cis-1,3-Dichloropropene	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Trichloroethene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Dibromochloromethane	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
1,1,2-Trichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Benzene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
trans-1,3-Dichloropropene	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Bromoform	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
4-Methyl-2-Pentanone	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
2-Hexanone	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Tetrachloroethene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1,2,2-Tetrachloroethane	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Toluene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Chlorobenzene	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Ethylbenzene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Styrene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Total Xylenes	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
SEMI-VOLATILES (BY GC/MS)																
Phenol	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Bis(2-chloroethyl)ether	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2-Chlorophenol	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
1,3-Dichlorobenzene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
1,4-Dichlorobenzene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Benzyl alcohol	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
1,2-Dichlorobenzene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2-Methylphenol	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Bis(2-chloroisopropyl)ether	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
4-Methylphenol	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
N-Nitroso-di-n-propylamine	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Hexachloroethane	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79
Nitrobenzene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Isophorone	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2-Nitrophenol	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79
2,4-Dimethylphenol	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Benzoic Acid	990	U	ug/kg DB	990	990	U	ug/kg DB	990	940	U	ug/kg DB	940	990	U	ug/kg DB	990
Bis(2-chloroethoxy)methane	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2,4-Dichorophenol	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79
1,2,4-Trichlorobenzene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Napthalene	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79
4-Chloroaniline	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Hexachlorobutadiene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
4-Chloro-3-methylphenol	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	MW1-10-15D	MW1-10-20	MW1-11-15	MW1-11-20
	Lab Sample No	15928-104	15928-105	15928-106	15928-107
	Matrix	SOIL	SOIL	SOIL	SOIL
	Assoc Sample()	EB-9, TB-4, FB-2	EB-9, TB-4, FB-2	EB-9, TB-4, FB-2	EB-9, TB-4, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
2-Methylnapthalene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Hexachlorocyclopentadiene	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79
2,4,6-Trichlorophenol	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79
2,4,5-Trichlorophenol	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79
2-Chloronapthalene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2-Nitroaniline	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79
Dimethylphthalate	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Acenaphthylene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2,6-Dinitrotoluene	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79
3-Nitroaniline	200	U	ug/kg DB	200	200	U	ug/kg DB	200	190	U	ug/kg DB	190	200	U	ug/kg DB	200
Acenaphthene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2,4-Dinitrophenol	400	U	ug/kg DB	400	390	U	ug/kg DB	390	380	U	ug/kg DB	380	390	U	ug/kg DB	390
4-Nitrophenol	400	U	ug/kg DB	400	390	U	ug/kg DB	390	380	U	ug/kg DB	380	390	U	ug/kg DB	390
Dibenzofuran	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2,4-Dinitrotoluene	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79
Diethylphthalate	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
4-Chlorophenyl-phenylether	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Fluorene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
4-Nitroaniline	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79
4,6-Dinitro-2-Methylphenol	400	U	ug/kg DB	400	390	U	ug/kg DB	390	380	U	ug/kg DB	380	390	U	ug/kg DB	390
N-Nitrosodiphenylamine(1)	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
4-Bromophenyl-phenylether	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79
Hexachlorobenzene	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79
Pentachlorophenol	400	U	ug/kg DB	400	390	U	ug/kg DB	390	380	U	ug/kg DB	380	390	U	ug/kg DB	390
Phenanthrene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Anthracene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Di-n-butylphthalate	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Fluoranthene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Pyrene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Butylbenzylphthalate	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
3,3'-Dichlorobenzidine	400	U	ug/kg DB	400	390	U	ug/kg DB	390	380	U	ug/kg DB	380	390	U	ug/kg DB	390
Benzo(a)anthracene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Chrysene	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Bis(2-ethylhexyl)phthalate	40		ug/kg DB	40	27	J	ug/kg DB	39	31	J	ug/kg DB	38	34	J	ug/kg DB	39
Di-n-octyl phthalate	40	U	ug/kg DB	40	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Benzo(b)flouranthene	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79
Benzo(k)flouranthene	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79
Benzo(a)pyrene	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79
Indeno(1,2,3-cd)pyrene	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79
Dibenzo(a,h)anthracene	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79
Benzo(g,h,i)perylene	79	U	ug/kg DB	79	79	U	ug/kg DB	79	75	U	ug/kg DB	75	79	U	ug/kg DB	79

(1) Cannot be separated from Diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	MW1-12-15	Sample No.	MW1-12-15D	Sample No.	MW1-12-20	Sample No.	MW1-13-15
	Lab Sample No	15928-108	Lab Sample No	15928-109	Lab Sample No	15928-110	Lab Sample No	15928-111
	Matrix	SOIL	Matrix	SOIL	Matrix	SOIL	Matrix	SOIL
	Assoc Sample()	EB-10, TB-5, FB-2	Assoc Sample()	EB-10, TB-5, FB-2	Assoc Sample()	EB-10, TB-5, FB-2	Assoc Sample()	EB-10, TB-5, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
EP TOXICITY METALS																
Arsenic	NT		mg/L	0.2	NT		mg/L	0.2	0.2		mg/L	0.2	NT		mg/L	0.2
Selenium	NT		mg/L	0.2	NT		mg/L	0.2	0.2		mg/L	0.2	NT		mg/L	0.2
Mercury	NT		mg/L	0.002	NT		mg/L	0.002	0.002		mg/L	0.002	NT		mg/L	0.002
Silver	NT		mg/L	0.1	NT		mg/L	0.1	0.1		mg/L	0.1	NT		mg/L	0.1
Cadmium	NT		mg/L	0.01	NT		mg/L	0.01	0.01		mg/L	0.01	NT		mg/L	0.01
Lead	NT		mg/L	0.1	NT		mg/L	0.1	0.1		mg/L	0.1	NT		mg/L	0.1
Chromium	NT		mg/L	0.1	NT		mg/L	0.1	0.1		mg/L	0.1	NT		mg/L	0.1
Barium	NT		mg/L	0.1	NT		mg/L	0.1	0.2		mg/L	0.1	NT		mg/L	0.1
EP TOXICITY PESTICIDE/HERBICIDE COMPOUNDS																
Gamma-BHC (Lindane)	NT		ug/L	0.05	NT		ug/L	0.05	0.05		ug/L	0.05	NT		ug/L	0.05
Endrin	NT		ug/L	0.1	NT		ug/L	0.1	0.1		ug/L	0.1	NT		ug/L	0.1
Methoxychlor	NT		ug/L	0.5	NT		ug/L	0.5	0.5		ug/L	0.5	NT		ug/L	0.5
Toxaphene	NT		ug/L	1	NT		ug/L	1	1		ug/L	1	NT		ug/L	1
2,4-D	NT		ug/L	1	NT		ug/L	1	1		ug/L	1	NT		ug/L	1
2,4,5,-TP	NT		ug/L	0.5	NT		ug/L	0.5	0.5		ug/L	0.5	NT		ug/L	0.5
INORGANICS																
Antimony	NT		mg/kg DB	2.5	NT		mg/kg DB	2.5	NT		mg/kg DB	2.5	NT		mg/kg DB	2.5
Thallium	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5
Lead	2.6		mg/kg DB	0.5	2.8		mg/kg DB	0.5	2.3		mg/kg DB	0.5	2.4		mg/kg DB	0.5
Arsenic	2.8		mg/kg DB	0.5	2.8		mg/kg DB	0.5	5.2		mg/kg DB	0.5	1.2		mg/kg DB	0.5
Selenium	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5
Mercury	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1
Silver	NT		mg/kg DB	0.6	NT		mg/kg DB	0.6	NT		mg/kg DB	0.6	NT		mg/kg DB	0.6
Copper	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1
Beryllium	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1
Nickel	NT		mg/kg DB	2	NT		mg/kg DB	2	NT		mg/kg DB	2	NT		mg/kg DB	2
Cadmium	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5
Chromium	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1
Zinc	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1
TPH OIL & GREASE	730		mg/kg DB	20	470		mg/kg DB	20	46		mg/kg DB	20	20	U	mg/kg DB	20
TOTAL ORGANIC CARBON	NT		% DB	0.1	NT		% DB	0.1	1.5		% DB	0.1	NT		% DB	0.1
VOLATILE ORGANICS (BY GC/MS)																
Chloromethane	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Bromomethane	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Vinyl Chloride	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Chloroethane	190	U	ug/kg DB	190	100	U	ug/kg DB	100	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Methylene Chloride	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Acetone	320	U	ug/kg DB	320	170	U	ug/kg DB	170	30		ug/kg DB	8	61		ug/kg DB	8
Carbon Disulfide	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1-Dichloroethene	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1-Dichloroethane	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloroethene (total)	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

Sample No.	: MW1-12-15	Sample No.	: MW1-12-15D	Sample No.	: MW1-12-20	Sample No.	: MW1-13-15
Lab Sample No	: 15928-108	Lab Sample No	: 15928-109	Lab Sample No	: 15928-110	Lab Sample No	: 15928-111
Matrix	: SOIL	Matrix	: SOIL	Matrix	: SOIL	Matrix	: SOIL
Assoc Sample()	: EB-10, TB-5, FB-2	Assoc Sample()	: EB-10, TB-5, FB-2	Assoc Sample()	: EB-10, TB-5, FB-2	Assoc Sample()	: EB-10, TB-5, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Chloroform	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloroethane	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
2-Butanone	190	U	ug/kg DB	190	100	U	ug/kg DB	100	5	U	ug/kg DB	5	5	U	ug/kg DB	5
1,1,1-Trichloroethane	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Carbon Tetrachloride	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Vinyl Acetate	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Bromodichloromethane	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloropropane	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
cis-1,3-Dichloropropene	190	U	ug/kg DB	190	100	U	ug/kg DB	100	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Trichloroethene	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Dibromochloromethane	190	U	ug/kg DB	190	100	U	ug/kg DB	100	5	U	ug/kg DB	5	5	U	ug/kg DB	5
1,1,2-Trichloroethane	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Benzene	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
trans-1,3-Dichloropropene	190	U	ug/kg DB	190	100	U	ug/kg DB	100	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Bromoform	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
4-Methyl-2-Pentanone	190	U	ug/kg DB	190	100	U	ug/kg DB	100	5	U	ug/kg DB	5	5	U	ug/kg DB	5
2-Hexanone	190	U	ug/kg DB	190	100	U	ug/kg DB	100	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Tetrachloroethene	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1,2,2-Tetrachloroethane	190	U	ug/kg DB	190	100	U	ug/kg DB	100	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Toluene	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Chlorobenzene	190	U	ug/kg DB	190	100	U	ug/kg DB	100	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Ethylbenzene	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Styrene	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Total Xylenes	64	U	ug/kg DB	64	34	U	ug/kg DB	34	2	U	ug/kg DB	2	1	J	ug/kg DB	2
SEMI-VOLATILES (BY GC/MS)																
Phenol	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Bis(2-chloroethyl)ether	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2-Chlorophenol	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
1,3-Dichlorobenzene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
1,4-Dichlorobenzene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Benzyl alcohol	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
1,2-Dichlorobenzene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2-Methylphenol	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Bis(2-chloroisopropyl)ether	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
4-Methylphenol	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
N-Nitroso-di-n-propylamine	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Hexachloroethane	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77	78	U	ug/kg DB	78
Nitrobenzene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Isophorone	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2-Nitrophenol	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77	78	U	ug/kg DB	78
2,4-Dimethylphenol	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Benzoic Acid	970	U	ug/kg DB	970	960	U	ug/kg DB	960	960	U	ug/kg DB	960	970	U	ug/kg DB	970
Bis(2-chloroethoxy)methane	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
2,4-Dichorophenol	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77	78	U	ug/kg DB	78
1,2,4-Trichlorobenzene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Napthalene	300		ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77	78	U	ug/kg DB	78
4-Chloroaniline	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
Hexachlorobutadiene	39	U	ug/kg DB	39	39	U	ug/kg DB	39	38	U	ug/kg DB	38	39	U	ug/kg DB	39
4-Chloro-3-methylphenol	78	U	ug/kg DB	78	77	U	ug/kg DB	77	77	U	ug/kg DB	77	78	U	ug/kg DB	78

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	MW1-12-15	MW1-12-15D	MW1-12-20	MW1-13-15
Sample No.	MW1-12-15	MW1-12-15D	MW1-12-20	MW1-13-15
Lab Sample No	15928-108	15928-109	15928-110	15928-111
Matrix	SOIL	SOIL	SOIL	SOIL
Assoc Sample()	EB-10, TB-5, FB-2	EB-10, TB-5, FB-2	EB-10, TB-5, FB-2	EB-10, TB-5, FB-2

	Test Result	Flag	Unit		LLD	Test Result	Flag	Unit		LLD	Test Result	Flag	Unit		LLD	Test Result	Flag	Unit		LLD
2-Methylnapthalene	820		ug/kg	DB	39	110		ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Hexachlorocyclopentadiene	78	U	ug/kg	DB	78	77	U	ug/kg	DB	77	77	U	ug/kg	DB	77	78	U	ug/kg	DB	78
2,4,6-Trichlorophenol	78	U	ug/kg	DB	78	77	U	ug/kg	DB	77	77	U	ug/kg	DB	77	78	U	ug/kg	DB	78
2,4,5-Trichlorophenol	78	U	ug/kg	DB	78	77	U	ug/kg	DB	77	77	U	ug/kg	DB	77	78	U	ug/kg	DB	78
2-Chloronapthalene	39	U	ug/kg	DB	39	39	U	ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
2-Nitroaniline	78	U	ug/kg	DB	78	77	U	ug/kg	DB	77	77	U	ug/kg	DB	77	78	U	ug/kg	DB	78
Dimethylphthalate	39	U	ug/kg	DB	39	14	J	ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Acenaphthylene	39	U	ug/kg	DB	39	39	U	ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
2,6-Dinitrotoluene	78	U	ug/kg	DB	78	77	U	ug/kg	DB	77	77	U	ug/kg	DB	77	78	U	ug/kg	DB	78
3-Nitroaniline	190	U	ug/kg	DB	190	190	U	ug/kg	DB	190	190	U	ug/kg	DB	190	190	U	ug/kg	DB	190
Acenaphthene	39	U	ug/kg	DB	39	39	U	ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
2,4-Dinitrophenol	390	U	ug/kg	DB	390	390	U	ug/kg	DB	390	380	U	ug/kg	DB	380	390	U	ug/kg	DB	390
4-Nitrophenol	390	U	ug/kg	DB	390	390	U	ug/kg	DB	390	380	U	ug/kg	DB	380	390	U	ug/kg	DB	390
Dibenzofuran	17	J	ug/kg	DB	39	39	U	ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
2,4-Dinitrotoluene	78	U	ug/kg	DB	78	77	U	ug/kg	DB	77	77	U	ug/kg	DB	77	78	U	ug/kg	DB	78
Diethylphthalate	39	U	ug/kg	DB	39	39	U	ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
4-Chlorophenyl-phenylether	39	U	ug/kg	DB	39	39	U	ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Fluorene	43		ug/kg	DB	39	39	U	ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
4-Nitroaniline	78	U	ug/kg	DB	78	77	U	ug/kg	DB	77	77	U	ug/kg	DB	77	78	U	ug/kg	DB	78
4,6-Dinitro-2-Methylphenol	390	U	ug/kg	DB	390	390	U	ug/kg	DB	390	380	U	ug/kg	DB	380	390	U	ug/kg	DB	390
N-Nitrosodiphenylamine(1)	39	U	ug/kg	DB	39	39	U	ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
4-Bromophenyl-phenylether	78	U	ug/kg	DB	78	77	U	ug/kg	DB	77	77	U	ug/kg	DB	77	78	U	ug/kg	DB	78
Hexachlorobenzene	78	U	ug/kg	DB	78	77	U	ug/kg	DB	77	77	U	ug/kg	DB	77	78	U	ug/kg	DB	78
Pentachlorophenol	390	U	ug/kg	DB	390	390	U	ug/kg	DB	390	380	U	ug/kg	DB	380	390	U	ug/kg	DB	390
Phenanthrene	39	U	ug/kg	DB	39	39	U	ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Anthracene	39	U	ug/kg	DB	39	39	U	ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Di-n-butylphthalate	15	J	ug/kg	DB	39	39	U	ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Fluoranthene	39	U	ug/kg	DB	39	39	U	ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Pyrene	39	U	ug/kg	DB	39	39	U	ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Butylbenzylphthalate	39	U	ug/kg	DB	39	39	U	ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
3,3'-Dichlorobenzidine	390	U	ug/kg	DB	390	390	U	ug/kg	DB	390	380	U	ug/kg	DB	380	390	U	ug/kg	DB	390
Benzo(a)anthracene	39	U	ug/kg	DB	39	39	U	ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Chrysene	39	U	ug/kg	DB	39	39	U	ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Bis(2-ethylhexyl)phthalate	24	J	ug/kg	DB	39	22	J	ug/kg	DB	39	38	U	ug/kg	DB	38	21	J	ug/kg	DB	39
Di-n-octyl phthalate	39	U	ug/kg	DB	39	39	U	ug/kg	DB	39	38	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Benzo(b)flouranthene	78	U	ug/kg	DB	78	77	U	ug/kg	DB	77	77	U	ug/kg	DB	77	78	U	ug/kg	DB	78
Benzo(k)flouranthene	78	U	ug/kg	DB	78	77	U	ug/kg	DB	77	77	U	ug/kg	DB	77	78	U	ug/kg	DB	78
Benzo(a)pyrene	78	U	ug/kg	DB	78	77	U	ug/kg	DB	77	77	U	ug/kg	DB	77	78	U	ug/kg	DB	78
Indeno(1,2,3-cd)pyrene	78	U	ug/kg	DB	78	77	U	ug/kg	DB	77	77	U	ug/kg	DB	77	78	U	ug/kg	DB	78
Dibenzo(a,h)anthracene	78	U	ug/kg	DB	78	77	U	ug/kg	DB	77	77	U	ug/kg	DB	77	78	U	ug/kg	DB	78
Benzo(g,h,i)perylene	78	U	ug/kg	DB	78	77	U	ug/kg	DB	77	77	U	ug/kg	DB	77	78	U	ug/kg	DB	78

(1) Cannot be separated from Diphenylamine

SAIC IRP Project - Joe foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	:	MW1-13-20	Sample No.	:	MW1-14-15	Sample No.	:	MW1-14-20		
	Lab Sample No	:	15928-112	Lab Sample No	:	15928-113	Lab Sample No	:	15928-114		
	Matrix	:	SOIL	Matrix	:	SOIL	Matrix	:	SOIL		
	Assoc Sample()	:	EB-10, TB-5, FB-2	Assoc Sample()	:	EB-11, TB-5, FB-2	Assoc Sample()	:	EB-11, TB-5, FB-2		
	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
EP TOXICITY METALS												
Arsenic	NT		mg/L	0.2	NT		mg/L	0.2	NT		mg/L	0.2
Selenium	NT		mg/L	0.2	NT		mg/L	0.2	NT		mg/L	0.2
Mercury	NT		mg/L	0.002	NT		mg/L	0.002	NT		mg/L	0.002
Silver	NT		mg/L	0.1	NT		mg/L	0.1	NT		mg/L	0.1
Cadmium	NT		mg/L	0.01	NT		mg/L	0.01	NT		mg/L	0.01
Lead	NT		mg/L	0.1	NT		mg/L	0.1	NT		mg/L	0.1
Chromium	NT		mg/L	0.1	NT		mg/L	0.1	NT		mg/L	0.1
Barium	NT		mg/L	0.1	NT		mg/L	0.1	NT		mg/L	0.1
EP TOXICITY PESTICIDE/HERBICIDE COMPOUNDS												
Gamma-BHC (Lindane)	NT		ug/L	0.05	NT		ug/L	0.05	NT	U	ug/L	0.05
Endrin	NT		ug/L	0.1	NT		ug/L	0.1	NT	U	ug/L	0.1
Methoxychlor	NT		ug/L	0.5	NT		ug/L	0.5	NT	U	ug/L	0.5
Toxaphene	NT		ug/L	1	NT		ug/L	1	NT	U	ug/L	1
2,4-D	NT		ug/L	1	NT		ug/L	1	NT	U	ug/L	1
2,4,5,-TP	NT		ug/L	0.5	NT		ug/L	0.5	NT	U	ug/L	0.5
INORGANICS												
Antimony	NT		mg/kg DB	2.5	NT		mg/kg DB	2.5	NT		mg/kg DB	2.5
Thallium	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5
Lead	2.0		mg/kg DB	0.5	7.1		mg/kg DB	0.5	2.1		mg/kg DB	0.5
Arsenic	1		mg/kg DB	0.5	21.0		mg/kg DB	0.5	3.3		mg/kg DB	0.5
Selenium	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5
Mercury	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1
Silver	NT		mg/kg DB	0.6	NT		mg/kg DB	0.6	NT		mg/kg DB	0.6
Copper	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1
Beryllium	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1	NT		mg/kg DB	0.1
Nickel	NT		mg/kg DB	2	NT		mg/kg DB	2	NT		mg/kg DB	2
Cadmium	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5	NT		mg/kg DB	0.5
Chromium	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1
Zinc	NT		mg/kg DB	1	NT		mg/kg DB	1	NT		mg/kg DB	1
TPH OIL & GREASE	270		mg/kg DB	20	600		mg/kg DB	20	160		mg/kg DB	20
TOTAL ORGANIC CARBON	NT		% DB	0.1	NT		% DB	0.1	NT		% DB	0.1
VOLATILE ORGANICS (BY GC/MS)												
Chloromethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Bromomethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Vinyl Chloride	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Chloroethane	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Methylene Chloride	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Acetone	67		ug/kg DB	8	75		ug/kg DB	8	53		ug/kg DB	8
Carbon Disulfide	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1-Dichloroethene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1-Dichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloroethene (total)	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

Sample No.	:	MW1-13-20	MW1-14-15	MW1-14-20
Lab Sample No	:	15928-112	15928-113	15928-114
Matrix	:	SOIL	SOIL	SOIL
Assoc Sample()	:	EB-10, TB-5, FB-2	EB-11, TB-5, FB-2	EB-11, TB-5, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Chloroform	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
2-Butanone	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
1,1,1-Trichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Carbon Tetrachloride	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Vinyl Acetate	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Bromodichloromethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloropropane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
cis-1,3-Dichloropropene	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Trichloroethene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Dibromochloromethane	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
1,1,2-Trichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Benzene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
trans-1,3-Dichloropropene	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Bromoform	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
4-Methyl-2-Pentanone	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
2-Hexanone	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Tetrachloroethene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1,2,2-Tetrachloroethane	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Toluene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Chlorobenzene	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Ethylbenzene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Styrene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Total Xylenes	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
SEMI-VOLATILES (BY GC/MS)												
Phenol	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Bis(2-chloroethyl)ether	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
2-Chlorophenol	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
1,3-Dichlorobenzene	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
1,4-Dichlorobenzene	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Benzyl alcohol	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
1,2-Dichlorobenzene	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
2-Methylphenol	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Bis(2-chloroisopropyl)ether	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
4-Methylphenol	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
N-Nitroso-di-n-propylamine	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Hexachloroethane	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79
Nitrobenzene	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Isophorone	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
2-Nitrophenol	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79
2,4-Dimethylphenol	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Benzoic Acid	950	U	ug/kg DB	950	980	U	ug/kg DB	980	990	U	ug/kg DB	990
Bis(2-chloroethoxy)methane	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
2,4-Dichorophenol	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79
1,2,4-Trichlorobenzene	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Napthalene	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79
4-Chloroaniline	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Hexachlorobutadiene	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
4-Chloro-3-methylphenol	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	MW1-13-20	MW1-14-15	MW1-14-20
Sample No.	MW1-13-20	MW1-14-15	MW1-14-20
Lab Sample No	15928-112	15928-113	15928-114
Matrix	SOIL	SOIL	SOIL
Assoc Sample()	EB-10, TB-5, FB-2	EB-11, TB-5, FB-2	EB-11, TB-5, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
2-Methylnapthalene	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Hexachlorocyclopentadiene	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79
2,4,6-Trichlorophenol	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79
2,4,5-Trichlorophenol	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79
2-Chloronapthalene	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
2-Nitroaniline	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79
Dimethylphthalate	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Acenaphthylene	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
2,6-Dinitrotoluene	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79
3-Nitroaniline	190	U	ug/kg DB	190	200	U	ug/kg DB	200	200	U	ug/kg DB	200
Acenaphthene	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
2,4-Dinitrophenol	380	U	ug/kg DB	380	390	U	ug/kg DB	390	390	U	ug/kg DB	390
4-Nitrophenol	380	U	ug/kg DB	380	390	U	ug/kg DB	390	390	U	ug/kg DB	390
Dibenzofuran	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
2,4-Dinitrotoluene	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79
Diethylphthalate	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
4-Chlorophenyl-phenylether	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Fluorene	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
4-Nitroaniline	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79
4,6-Dinitro-2-Methylphenol	380	U	ug/kg DB	380	390	U	ug/kg DB	390	390	U	ug/kg DB	390
N-Nitrosodiphenylamine(1)	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
4-Bromophenyl-phenylether	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79
Hexachlorobenzene	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79
Pentachlorophenol	380	U	ug/kg DB	380	390	U	ug/kg DB	390	390	U	ug/kg DB	390
Phenanthrene	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Anthracene	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Di-n-butylphthalate	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Fluoranthene	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Pyrene	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Butylbenzylphthalate	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
3,3'-Dichlorobenzidine	380	U	ug/kg DB	380	390	U	ug/kg DB	390	390	U	ug/kg DB	390
Benzo(a)anthracene	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Chrysene	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Bis(2-ethylhexyl)phthalate	18	J	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Di-n-octyl phthalate	38	U	ug/kg DB	38	39	U	ug/kg DB	39	39	U	ug/kg DB	39
Benzo(b)flouranthene	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79
Benzo(k)flouranthene	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79
Benzo(a)pyrene	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79
Indeno(1,2,3-cd)pyrene	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79
Dibenzo(a,h)anthracene	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79
Benzo(g,h,i)perylene	76	U	ug/kg DB	76	78	U	ug/kg DB	78	79	U	ug/kg DB	79

(1) Cannot be separated from Diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No. :	B3-1-0				B3-1-5				B3-2-0				B3-2-0D			
	Lab Sample No :	15928-80				15928-81				15928-82				15928-83			
	Matrix :	SOIL				SOIL				SOIL				SOIL			
	Assoc Sample() :	EB-4, TB-3, FB-1				EB-4, TB-3, FB-1				EB-4, TB-3, FB-1				EB-4, TB-3, FB-1			
		Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
EP TOXICITY METALS																	
Arsenic		0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2
Selenium		0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2
Mercury		0.002	U	mg/L	0.002	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002
Silver		0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Cadmium		0.01	U	mg/L	0.01	0.01	U	mg/L	0.01	0.01	U	mg/L	0.01	0.01	U	mg/L	0.01
Lead		0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Chromium		0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Barium		0.3		mg/L	0.1	0.4		mg/L	0.1	0.6		mg/L	0.1	0.7		mg/L	0.1
EP TOXICITY PESTICIDE/HERBICIDE COMPOUNDS																	
Gamma-BHC (Lindane)		0.05	U	ug/L	0.05	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05
Endrin		0.1	U	ug/L	0.1	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1
Methoxychlor		0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
Toxaphene		1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2,4-D		1.0	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2,4,5,-TP		0.50	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
INORGANICS																	
Antimony		2.5	U	mg/kg DB	2.5	2.5	U	mg/kg DB	2.5	2.5	U	mg/kg DB	2.5	2.5	U	mg/kg DB	2.5
Thallium		0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5
Lead		8.7		mg/kg DB	0.5	14		mg/kg DB	0.5	8.0		mg/kg DB	0.5	7.8		mg/kg DB	0.5
Arsenic		5.6		mg/kg DB	0.5	8.9		mg/kg DB	0.5	12		mg/kg DB	0.5	9.2		mg/kg DB	0.5
Selenium		0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5
Mercury		0.1	U	mg/kg DB	0.1	0.1	U	mg/kg DB	0.1	0.1	U	mg/kg DB	0.1	0.1	U	mg/kg DB	0.1
Silver		0.6	U	mg/kg DB	0.6	0.6	U	mg/kg DB	0.6	0.6	U	mg/kg DB	0.6	0.6	U	mg/kg DB	0.6
Copper		12		mg/kg DB	1	22		mg/kg DB	1	10		mg/kg DB	1	10		mg/kg DB	1
Beryllium		0.5		mg/kg DB	0.1	1.2		mg/kg DB	0.1	0.4		mg/kg DB	0.1	0.4		mg/kg DB	0.1
Nickel		17		mg/kg DB	2	31		mg/kg DB	2	23		mg/kg DB	2	21		mg/kg DB	2
Cadmium		0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5
Chromium		15		mg/kg DB	1	29		mg/kg DB	1	15		mg/kg DB	1	12		mg/kg DB	1
Zinc		54		mg/kg DB	1	100		mg/kg DB	1	48		mg/kg DB	1	48		mg/kg DB	1
TPH OIL & GREASE		120		ug/kg DB	20	30		mg/kg DB	20	59		mg/kg DB	20	96		mg/kg DB	20
TOTAL ORGANIC CARBON		1.7			0.1	NT		% DB	0.1	NT		% DB	0.1	NT		% DB	0.1
VOLATILE ORGANICS (BY GC/MS)																	
Chloromethane		4	U	ug/kg DB	4	7	U	ug/kg DB	7	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Bromomethane		4	U	ug/kg DB	4	7	U	ug/kg DB	7	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Vinyl Chloride		4	U	ug/kg DB	4	7	U	ug/kg DB	7	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Chloroethane		11	U	ug/kg DB	11	20	U	ug/kg DB	20	6	U	ug/kg DB	6	6	U	ug/kg DB	6
Methylene Chloride		4	U	ug/kg DB	4	7	U	ug/kg DB	7	4		ug/kg DB	2	2	U	ug/kg DB	2
Acetone		18	U	ug/kg DB	18	220		ug/kg DB	33	10	U	ug/kg DB	10	10	U	ug/kg DB	10
Carbon Disulfide		4	U	ug/kg DB	4	7	U	ug/kg DB	7	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1-Dichloroethene		4	U	ug/kg DB	4	7	U	ug/kg DB	7	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1-Dichloroethane		4	U	ug/kg DB	4	7	U	ug/kg DB	7	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloroethene (total)		4	U	ug/kg DB	4	7	U	ug/kg DB	7	2	U	ug/kg DB	2	2	U	ug/kg DB	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

Sample No.	:	B3-1-0				Sample No.	:	B3-1-5				Sample No.	:	B3-2-0			
Lab Sample No	:	15928-80				Lab Sample No	:	15928-81				Lab Sample No	:	15928-82			
Matrix	:	SOIL				Matrix	:	SOIL				Matrix	:	SOIL			
Assoc Sample()	:	EB-4, TB-3, FB-1				Assoc Sample()	:	EB-4, TB-3, FB-1				Assoc Sample()	:	EB-4, TB-3, FB-1			
	Test Result	Flag	Unit		LLD	Test Result	Flag	Unit		LLD		Test Result	Flag	Unit		LLD	
Chloroform	4	U	ug/kg	DB	4	7	U	ug/kg	DB	7		2	U	ug/kg	DB	2	
1,2-Dichloroethane	4	U	ug/kg	DB	4	7	U	ug/kg	DB	7		2	U	ug/kg	DB	2	
2-Butanone	11	U	ug/kg	DB	11	20	U	ug/kg	DB	20		6	U	ug/kg	DB	6	
1,1,1-Trichloroethane	4	U	ug/kg	DB	4	7	U	ug/kg	DB	7		2	U	ug/kg	DB	2	
Carbon Tetrachloride	4	U	ug/kg	DB	4	7	U	ug/kg	DB	7		2	U	ug/kg	DB	2	
Vinyl Acetate	4	U	ug/kg	DB	4	7	U	ug/kg	DB	7		2	U	ug/kg	DB	2	
Bromodichloromethane	4	U	ug/kg	DB	4	7	U	ug/kg	DB	7		2	U	ug/kg	DB	2	
1,2-Dichloropropane	4	U	ug/kg	DB	4	7	U	ug/kg	DB	7		2	U	ug/kg	DB	2	
cis-1,3-Dichloropropene	11	U	ug/kg	DB	11	20	U	ug/kg	DB	20		6	U	ug/kg	DB	6	
Trichloroethene	4	U	ug/kg	DB	4	7	U	ug/kg	DB	7		2	U	ug/kg	DB	2	
Dibromochloromethane	11	U	ug/kg	DB	11	20	U	ug/kg	DB	20		6	U	ug/kg	DB	6	
1,1,2-Trichloroethane	4	U	ug/kg	DB	4	7	U	ug/kg	DB	7		2	U	ug/kg	DB	2	
Benzene	4	U	ug/kg	DB	4	7	U	ug/kg	DB	7		2	U	ug/kg	DB	2	
trans-1,3-Dichloropropene	11	U	ug/kg	DB	11	20	U	ug/kg	DB	20		6	U	ug/kg	DB	6	
Bromoform	4	U	ug/kg	DB	4	7	U	ug/kg	DB	7		2	U	ug/kg	DB	2	
4-Methyl-2-Pentanone	11	U	ug/kg	DB	11	20	U	ug/kg	DB	20		6	U	ug/kg	DB	6	
2-Hexanone	11	U	ug/kg	DB	11	20	U	ug/kg	DB	20		6	U	ug/kg	DB	6	
Tetrachloroethene	4	U	ug/kg	DB	4	7	U	ug/kg	DB	7		2	U	ug/kg	DB	2	
1,1,2,2-Tetrachloroethane	11	U	ug/kg	DB	11	20	U	ug/kg	DB	20		6	U	ug/kg	DB	6	
Toluene	4	U	ug/kg	DB	4	100		ug/kg	DB	7		2	U	ug/kg	DB	2	
Chlorobenzene	11	U	ug/kg	DB	11	20	U	ug/kg	DB	20		6	U	ug/kg	DB	6	
Ethylbenzene	4	U	ug/kg	DB	4	1100		ug/kg	DB	7		2	U	ug/kg	DB	2	
Styrene	4	U	ug/kg	DB	4	7	U	ug/kg	DB	7		2	U	ug/kg	DB	2	
Total Xylenes	53		ug/kg	DB	4	1600		ug/kg	DB	7		2	U	ug/kg	DB	2	
SEMI-VOLATILES (BY GC/MS)																	
Phenol	40	U	ug/kg	DB	40	44	U	ug/kg	DB	44		38	U	ug/kg	DB	38	
Bis(2-chloroethyl)ether	40	U	ug/kg	DB	40	44	U	ug/kg	DB	44		38	U	ug/kg	DB	38	
2-Chlorophenol	40	U	ug/kg	DB	40	44	U	ug/kg	DB	44		38	U	ug/kg	DB	38	
1,3-Dichlorobenzene	40	U	ug/kg	DB	40	44	U	ug/kg	DB	44		38	U	ug/kg	DB	38	
1,4-Dichlorobenzene	40	U	ug/kg	DB	40	44	U	ug/kg	DB	44		38	U	ug/kg	DB	38	
Benzyl alcohol	40	U	ug/kg	DB	40	44	U	ug/kg	DB	44		38	U	ug/kg	DB	38	
1,2-Dichlorobenzene	40	U	ug/kg	DB	40	44	U	ug/kg	DB	44		38	U	ug/kg	DB	38	
2-Methylphenol	40	U	ug/kg	DB	40	44	U	ug/kg	DB	44		38	U	ug/kg	DB	38	
Bis(2-chloroisopropyl)ether	40	U	ug/kg	DB	40	44	U	ug/kg	DB	44		38	U	ug/kg	DB	38	
4-Methylphenol	40	U	ug/kg	DB	40	230		ug/kg	DB	44		38	U	ug/kg	DB	38	
N-Nitroso-di-n-propylamine	40	U	ug/kg	DB	40	44	U	ug/kg	DB	44		38	U	ug/kg	DB	38	
Hexachloroethane	81	U	ug/kg	DB	81	88	U	ug/kg	DB	88		77	U	ug/kg	DB	77	
Nitrobenzene	40	U	ug/kg	DB	40	44	U	ug/kg	DB	44		38	U	ug/kg	DB	38	
Isophorone	40	U	ug/kg	DB	40	44	U	ug/kg	DB	44		38	U	ug/kg	DB	38	
2-Nitrophenol	81	U	ug/kg	DB	81	88	U	ug/kg	DB	88		77	U	ug/kg	DB	77	
2,4-Dimethylphenol	40	U	ug/kg	DB	40	44	U	ug/kg	DB	44		38	U	ug/kg	DB	38	
Benzoic Acid	1000	U	ug/kg	DB	1000	1100	U	ug/kg	DB	1100		960	U	ug/kg	DB	960	
Bis(2-chloroethoxy)methane	40	U	ug/kg	DB	40	44	U	ug/kg	DB	44		38	U	ug/kg	DB	38	
2,4-Dichorophenol	81	U	ug/kg	DB	81	88	U	ug/kg	DB	88		77	U	ug/kg	DB	77	
1,2,4-Trichlorobenzene	40	U	ug/kg	DB	40	44	U	ug/kg	DB	44		38	U	ug/kg	DB	38	
Napthalene	170		ug/kg	DB	81	700		ug/kg	DB	88		77	U	ug/kg	DB	77	
4-Chloroaniline	40	U	ug/kg	DB	40	44	U	ug/kg	DB	44		38	U	ug/kg	DB	38	
Hexachlorobutadiene	40	U	ug/kg	DB	40	44	U	ug/kg	DB	44		38	U	ug/kg	DB	38	
4-Chloro-3-methylphenol	81	U	ug/kg	DB	81	88	U	ug/kg	DB	88		77	U	ug/kg	DB	77	

Sample No.	:	B3-2-00				
Lab Sample No	:	15928-83				
Matrix	:	SOIL				
Assoc Sample()	:	EB-4, TB-3, FB-1				
	Test Result	Flag	Unit		LLD	
Chloroform	2	U	ug/kg	DB	2	
1,2-Dichloroethane	2	U	ug/kg	DB	2	
2-Butanone	6	U	ug/kg	DB	6	
1,1,1-Trichloroethane	2	U	ug/kg	DB	2	
Carbon Tetrachloride	2	U	ug/kg	DB	2	
Vinyl Acetate	2	U	ug/kg	DB	2	
Bromodichloromethane	2	U	ug/kg	DB	2	
1,2-Dichloropropane	2	U	ug/kg	DB	2	
cis-1,3-Dichloropropene	6	U	ug/kg	DB	6	
Trichloroethene	2	U	ug/kg	DB	2	
Dibromochloromethane	6	U	ug/kg	DB	6	
1,1,2-Trichloroethane	2	U	ug/kg	DB	2	
Benzene	2	U	ug/kg	DB	2	
trans-1,3-Dichloropropene	6	U	ug/kg	DB	6	
Bromoform	2	U	ug/kg	DB	2	
4-Methyl-2-Pentanone	6	U	ug/kg	DB	6	
2-Hexanone	6	U	ug/kg	DB	6	
Tetrachloroethene	2	U	ug/kg	DB	2	
1,1,2,2-Tetrachloroethane	6	U	ug/kg	DB	6	
Toluene	2	U	ug/kg	DB	2	
Chlorobenzene	6	U	ug/kg	DB	6	
Ethylbenzene	2	U	ug/kg	DB	2	
Styrene	2	U	ug/kg	DB	2	
Total Xylenes	2	U	ug/kg	DB	2	
SEMI-VOLATILES (BY GC/MS)						
Phenol	49		ug/kg	DB	40	
Bis(2-chloroethyl)ether	40	U	ug/kg	DB	40	
2-Chlorophenol	40	U	ug/kg	DB	40	
1,3-Dichlorobenzene	40	U	ug/kg	DB	40	
1,4-Dichlorobenzene	40	U	ug/kg	DB	40	
Benzyl alcohol	40	U	ug/kg	DB	40	
1,2-Dichlorobenzene	40	U	ug/kg	DB	40	
2-Methylphenol	40	U	ug/kg	DB	40	
Bis(2-chloroisopropyl)ether	40	U	ug/kg	DB	40	
4-Methylphenol	40	U	ug/kg	DB	40	
N-Nitroso-di-n-propylamine	40	U	ug/kg	DR	40	
Hexachloroethane	80	U	ug/kg	DB	80	
Nitrobenzene	40	U	ug/kg	DB	40	
Isophorone	40	U	ug/kg	DB	40	
2-Nitrophenol	80	U	ug/kg	DB	80	
2,4-Dimethylphenol	40	U	ug/kg	DB	40	
Benzoic Acid	1000	U	ug/kg	DB	1000	
Bis(2-chloroethoxy)methane	40	U	ug/kg	DB	40	
2,4-Dichorophenol	80	U	ug/kg	DB	80	
1,2,4-Trichlorobenzene	40	U	ug/kg	DB	40	
Napthalene	80	U	ug/kg	DB	80	
4-Chloroaniline	40	U	ug/kg	DB	40	
Hexachlorobutadiene	40	U	ug/kg	DB	40	
4-Chloro-3-methylphenol	80	U	ug/kg	DB	80	

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	B3-1-0				B3-1-5				B3-2-0				B3-2-0C			
Sample No.	B3-1-0				B3-1-5				B3-2-0				B3-2-0C			
Lab Sample No	15928-80				15928-81				15928-82				15928-83			
Matrix	SOIL				SOIL				SOIL				SOIL			
Assoc Sample()	EB-4, TB-3, FB-1				EB-4, TB-3, FB-1				EB-4, TB-3, FB-1				EB-4, TB-3, FB-1			
	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
2-Methylnapthalene	38	J	ug/kg DB	40	63		ug/kg DB	44	38	U	ug/kg DB	38	40	U	ug/kg DB	40
Hexachlorocyclopentadiene	81	U	ug/kg DB	81	88	U	ug/kg DB	88	77	U	ug/kg DB	77	80	U	ug/kg DB	80
2,4,6-Trichlorophenol	81	U	ug/kg DB	81	88	U	ug/kg DB	88	77	U	ug/kg DB	77	80	U	ug/kg DB	80
2,4,5-Trichlorophenol	81	U	ug/kg DB	81	88	U	ug/kg DB	88	77	U	ug/kg DB	77	80	U	ug/kg DB	80
2-Chloronapthalene	40	U	ug/kg DB	40	44	U	ug/kg DB	44	38	U	ug/kg DB	38	40	U	ug/kg DB	40
2-Nitroaniline	81	U	ug/kg DB	81	88	U	ug/kg DB	88	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Dimethylphthalate	40	U	ug/kg DB	40	44	U	ug/kg DB	44	38	U	ug/kg DB	38	40	U	ug/kg DB	40
Acenaphthylene	40	U	ug/kg DB	40	44	U	ug/kg DB	44	38	U	ug/kg DB	38	40	U	ug/kg DB	40
2,6-Dinitrotoluene	81	U	ug/kg DB	81	88	U	ug/kg DB	88	77	U	ug/kg DB	77	80	U	ug/kg DB	80
3-Nitroaniline	200	U	ug/kg DB	200	220	U	ug/kg DB	220	190	U	ug/kg DB	190	200	U	ug/kg DB	200
Acenaphthene	40	U	ug/kg DB	40	44	U	ug/kg DB	44	38	U	ug/kg DB	38	40	U	ug/kg DB	40
2,4-Dinitrophenol	400	U	ug/kg DB	400	440	U	ug/kg DB	440	380	U	ug/kg DB	380	400	U	ug/kg DB	400
4-Nitrophenol	400	U	ug/kg DB	400	440	U	ug/kg DB	440	380	U	ug/kg DB	380	400	U	ug/kg DB	400
Dibenzofuran	40	U	ug/kg DB	40	44	U	ug/kg DB	44	38	U	ug/kg DB	38	40	U	ug/kg DB	40
2,4-Dinitrotoluene	81	U	ug/kg DB	81	88	U	ug/kg DB	88	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Diethylphthalate	40	U	ug/kg DB	40	44	U	ug/kg DB	44	38	U	ug/kg DB	38	40	U	ug/kg DB	40
4-Chlorophenyl-phenylether	40	U	ug/kg DB	40	44	U	ug/kg DB	44	38	U	ug/kg DB	38	40	U	ug/kg DB	40
Fluorene	40	U	ug/kg DB	40	44	U	ug/kg DB	44	38	U	ug/kg DB	38	40	U	ug/kg DB	40
4-Nitroaniline	81	U	ug/kg DB	81	88	U	ug/kg DB	88	77	U	ug/kg DB	77	80	U	ug/kg DB	80
4,6-Dinitro-2-Methylphenol	400	U	ug/kg DB	400	440	U	ug/kg DB	440	380	U	ug/kg DB	380	400	U	ug/kg DB	400
N-Nitrosodiphenylamine(1)	40	U	ug/kg DB	40	44	U	ug/kg DB	44	38	U	ug/kg DB	38	40	U	ug/kg DB	40
4-Bromophenyl-phenylether	81	U	ug/kg DB	81	88	U	ug/kg DB	88	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Hexachlorobenzene	81	U	ug/kg DB	81	88	U	ug/kg DB	88	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Pentachlorophenol	400	U	ug/kg DB	400	440	U	ug/kg DB	440	380	U	ug/kg DB	380	400	U	ug/kg DB	400
Phenanthrene	40	U	ug/kg DB	40	44	U	ug/kg DB	44	38	U	ug/kg DB	38	40	U	ug/kg DB	40
Anthracene	40	U	ug/kg DB	40	44	U	ug/kg DB	44	38	U	ug/kg DB	38	40	U	ug/kg DB	40
Di-n-butylphthalate	40	U	ug/kg DB	40	44	U	ug/kg DB	44	38	U	ug/kg DB	38	40	U	ug/kg DB	40
Fluoranthene	40	U	ug/kg DB	40	44	U	ug/kg DB	44	38	U	ug/kg DB	38	40	U	ug/kg DB	40
Pyrene	40	U	ug/kg DB	40	44	U	ug/kg DB	44	38	U	ug/kg DB	38	25	J	ug/kg DB	40
Butylbenzylphthalate	40	U	ug/kg DB	40	44	U	ug/kg DB	44	38	U	ug/kg DB	38	40	U	ug/kg DB	40
3,3'-Dichlorobenzidine	400	U	ug/kg DB	400	440	U	ug/kg DB	440	380	U	ug/kg DB	380	400	U	ug/kg DB	400
Benzo(a)anthracene	40	U	ug/kg DB	40	44	U	ug/kg DB	44	38	U	ug/kg DB	38	40	U	ug/kg DB	40
Chrysene	40	U	ug/kg DB	40	44	U	ug/kg DB	44	38	U	ug/kg DB	38	40	U	ug/kg DB	40
Bis(2-ethylhexyl)phthalate	23	JB	ug/kg DB	40	54	B	ug/kg DB	44	85	B	ug/kg DB	38	100	B	ug/kg DB	40
Di-n-octyl phthalate	40	U	ug/kg DB	40	44	U	ug/kg DB	44	12	J	ug/kg DB	38	40	U	ug/kg DB	40
Benzo(b)flouranthene	81	U	ug/kg DB	81	88	U	ug/kg DB	88	77	U	ug/kg DB	77	31	JX	ug/kg DB	80
Benzo(k)flouranthene	81	U	ug/kg DB	81	88	U	ug/kg DB	88	77	U	ug/kg DB	77	31	JX	ug/kg DB	80
Benzo(a)pyrene	81	U	ug/kg DB	81	88	U	ug/kg DB	88	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Indeno(1,2,3-cd)pyrene	81	U	ug/kg DB	81	88	U	ug/kg DB	88	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Dibenzo(a,h)anthracene	81	U	ug/kg DB	81	88	U	ug/kg DB	88	77	U	ug/kg DB	77	80	U	ug/kg DB	80
Benzo(g,h,i)perylene	81	U	ug/kg DB	81	88	U	ug/kg DB	88	77	U	ug/kg DB	77	80	U	ug/kg DB	80

(1) Cannot be separated from Diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No. :	B3-2-5	B3-3-0D	B3-3-0D	B3-3-2.5
	Lab Sample No :	15928-84	15928-85	15928-86	15928-87
	Matrix :	SOIL	SOIL	SOIL	SOIL
	Assoc Sample() :	EB-4, TB-3, FB-1	EB-4, TB-3, FB-1	EB-4, TB-3, FB-1	EB-4, TB-3, FB-1

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
EP TOXICITY METALS																
Arsenic	NT		mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2
Selenium	NT		mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2
Mercury	NT		mg/L	0.002	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002
Silver	NT		mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Cadmium	NT		mg/L	0.01	0.01	U	mg/L	0.01	0.01	U	mg/L	0.01	0.01	U	mg/L	0.01
Lead	NT		mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Chromium	NT		mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Barium	NT		mg/L	0.1	0.5		mg/L	0.1	0.4		mg/L	0.1	0.2		mg/L	0.1
EP TOXICITY PESTICIDE/HERBICIDE COMPOUNDS																
Gamma-BHC (Lindane)	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05
Endrin	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1
Methoxychlor	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
Toxaphene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2,4-D	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2,4,5,-TP	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
INORGANICS																
Antimony	NT		mg/kg DB	2.5	2.5	U	mg/kg DB	2.5	2.5	U	mg/kg DB	2.5	2.5	U	mg/kg DB	2.5
Thallium	NT		mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5
Lead	NT		mg/kg DB	0.5	6.2		mg/kg DB	0.5	7.9		mg/kg DB	0.5	11		mg/kg DB	0.5
Arsenic	NT		mg/kg DB	0.5	8.9		mg/kg DB	0.5	8.4		mg/kg DB	0.5	7.0		mg/kg DB	0.5
Selenium	NT		mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5
Mercury	NT		mg/kg DB	0.1	0.1	U	mg/kg DB	0.1	0.1	U	mg/kg DB	0.1	0.1	U	mg/kg DB	0.1
Silver	NT		mg/kg DB	0.6	0.6	U	mg/kg DB	0.6	0.6	U	mg/kg DB	0.6	0.6	U	mg/kg DB	0.6
Copper	NT		mg/kg DB	1	9		mg/kg DB	1	11		mg/kg DB	1	14		mg/kg DB	1
Beryllium	NT		mg/kg DB	0.1	0.3		mg/kg DB	0.1	0.3		mg/kg DB	0.1	0.7		mg/kg DB	0.1
Nickel	NT		mg/kg DB	2	23		mg/kg DB	2	21		mg/kg DB	2	22		mg/kg DB	2
Cadmium	NT		mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5
Chromium	NT		mg/kg DB	1	12		mg/kg DB	1	12		mg/kg DB	1	20		mg/kg DB	1
Zinc	NT		mg/kg DB	1	46		mg/kg DB	1	49		mg/kg DB	1	71		mg/kg DB	1
TPH OIL & GREASE	NT		mg/kg DB	20	34		mg/kg DB	20	130		mg/kg DB	20	110		mg/kg DB	20
TOTAL ORGANIC CARBON	NT		% DB	0.1	NT		% DB	0.1	NT		% DB	0.1	1.4		% DB	0.1
VOLATILE ORGANICS (BY GC/MS)																
Chloromethane	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
Bromomethane	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
Vinyl Chloride	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
Chloroethane	6	U	ug/kg DB	6	500	U	ug/kg DB	500	1100	U	ug/kg DB	1100	560	U	ug/kg DB	560
Methylene Chloride	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
Acetone	10	U	ug/kg DB	10	830	U	ug/kg DB	830	1900	U	ug/kg DB	1900	940	U	ug/kg DB	940
Carbon Disulfide	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
1,1-Dichloroethene	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
1,1-Dichloroethane	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
1,2-Dichloroethene (total)	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No. :	B3-2-5	B3-3-0D	B3-3-0D	B3-3-2.5
	Lab Sample No :	15928-84	15928-85	15928-86	15928-87
	Matrix :	SOIL	SOIL	SOIL	SOIL
	Assoc Sample() :	EB-4, TB-3, FB-1	EB-4, TB-3, FB-1	EB-4, TB-3, FB-1	EB-4, TB-3, FB-1

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Chloroform	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
1,2-Dichloroethane	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
2-Butanone	6	U	ug/kg DB	6	500	U	ug/kg DB	500	1100	U	ug/kg DB	1100	560	U	ug/kg DB	560
1,1,1-Trichloroethane	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
Carbon Tetrachloride	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
Vinyl Acetate	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
Bromodichloromethane	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
1,2-Dichloropropane	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
cis-1,3-Dichloropropene	6	U	ug/kg DB	6	500	U	ug/kg DB	500	1100	U	ug/kg DB	1100	560	U	ug/kg DB	560
Trichloroethene	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
Dibromochloromethane	6	U	ug/kg DB	6	500	U	ug/kg DB	500	1100	U	ug/kg DB	1100	560	U	ug/kg DB	560
1,1,2-Trichloroethane	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
Benzene	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
trans-1,3-Dichloropropene	6	U	ug/kg DB	6	500	U	ug/kg DB	500	1100	U	ug/kg DB	1100	560	U	ug/kg DB	560
Bromoform	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
4-Methyl-2-Pentanone	6	U	ug/kg DB	6	500	U	ug/kg DB	500	1100	U	ug/kg DB	1100	560	U	ug/kg DB	560
2-Hexanone	6	U	ug/kg DB	6	500	U	ug/kg DB	500	1100	U	ug/kg DB	1100	560	U	ug/kg DB	560
Tetrachloroethene	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
1,1,2,2-Tetrachloroethane	6	U	ug/kg DB	6	500	U	ug/kg DB	500	1100	U	ug/kg DB	1100	560	U	ug/kg DB	560
Toluene	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
Chlorobenzene	6	U	ug/kg DB	6	500	U	ug/kg DB	500	1100	U	ug/kg DB	1100	560	U	ug/kg DB	560
Ethylbenzene	2	U	ug/kg DB	2	2700		ug/kg DB	170	17000		ug/kg DB	370	40000		ug/kg DB	190
Styrene	2	U	ug/kg DB	2	170	U	ug/kg DB	170	370	U	ug/kg DB	370	190	U	ug/kg DB	190
Total Xylenes	2	U	ug/kg DB	2	5400		ug/kg DB	170	17000		ug/kg DB	370	70000	E	ug/kg DB	190
SEMI-VOLATILES (BY GC/MS)																
Phenol	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Bis(2-chloroethyl)ether	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
2-Chlorophenol	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
1,3-Dichlorobenzene	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
1,4-Dichlorobenzene	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Benzyl alcohol	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
1,2-Dichlorobenzene	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
2-Methylphenol	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Bis(2-chloroisopropyl)ether	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
4-Methylphenol	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
N-Nitroso-di-n-propylamine	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Hexachloroethane	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860
Nitrobenzene	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Isophorone	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
2-Nitrophenol	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860
2,4-Dimethylphenol	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Benzoic Acid	1100	U	ug/kg DB	1100	9500	U	ug/kg DB	9500	9700	U	ug/kg DB	9700	11000	U	ug/kg DB	11000
Bis(2-chloroethoxy)methane	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
2,4-Dichorophenol	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860
1,2,4-Trichlorobenzene	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Napthalene	85		ug/kg DB	85	390	J	ug/kg DB	760	750	J	ug/kg DB	780	2400		ug/kg DB	860
4-Chloroaniline	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Hexachlorobutadiene	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
4-Chloro-3-methylphenol	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No. :	B3-2-5	B3-3-0D	B3-3-0D	B3-3-2.5
	Lab Sample No :	15928-84	15928-85	15928-86	15928-87
	Matrix :	SOIL	SOIL	SOIL	SOIL
	Assoc Sample() :	EB-4, TB-3, FB-1	EB-4, TB-3, FB-1	EB-4, TB-3, FB-1	EB-4, TB-3, FB-1

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
2-Methylnapthalene	43	U	ug/kg DB	43	380	U	ug/kg DB	380	180	J	ug/kg DB	390	350	J	ug/kg DB	430
Hexachlorocyclopentadiene	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860
2,4,6-Trichlorophenol	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860
2,4,5-Trichlorophenol	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860
2-Chloronapthalene	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
2-Nitroaniline	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860
Dimethylphthalate	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Acenaphthylene	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
2,6-Dinitrotoluene	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860
3-Nitroaniline	210	U	ug/kg DB	210	1900	U	ug/kg DB	1900	1900	U	ug/kg DB	1900	2200	U	ug/kg DB	2200
Acenaphthene	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
2,4-Dinitrophenol	430	U	ug/kg DB	430	3800	U	ug/kg DB	3800	3900	U	ug/kg DB	3900	4300	U	ug/kg DB	4300
4-Nitrophenol	430	U	ug/kg DB	430	3800	U	ug/kg DB	3800	3900	U	ug/kg DB	3900	4300	U	ug/kg DB	4300
Dibenzofuran	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
2,4-Dinitrotoluene	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860
Diethylphthalate	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
4-Chlorophenyl-phenylether	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Fluorene	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
4-Nitroaniline	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860
4,6-Dinitro-2-Methylphenol	430	U	ug/kg DB	430	3800	U	ug/kg DB	3800	3900	U	ug/kg DB	3900	4300	U	ug/kg DB	4300
N-Nitrosodiphenylamine(1)	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
4-Bromophenyl-phenylether	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860
Hexachlorobenzene	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860
Pentachlorophenol	430	U	ug/kg DB	430	3800	U	ug/kg DB	3800	3900	U	ug/kg DB	3900	4300	U	ug/kg DB	4300
Phenanthrene	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Anthracene	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Di-n-butylphthalate	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Fluoranthene	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Pyrene	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Butylbenzylphthalate	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
3,3'-Dichlorobenzidine	430	U	ug/kg DB	430	3800	U	ug/kg DB	3800	3900	U	ug/kg DB	3900	4300	U	ug/kg DB	4300
Benzo(a)anthracene	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Chrysene	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Bis(2-ethylhexyl)phthalate	49	B	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Di-n-octyl phthalate	43	U	ug/kg DB	43	380	U	ug/kg DB	380	390	U	ug/kg DB	390	430	U	ug/kg DB	430
Benzo(b)flouranthene	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860
Benzo(k)flouranthene	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860
Benzo(a)pyrene	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860
Indeno(1,2,3-cd)pyrene	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860
Dibenzo(a,h)anthracene	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860
Benzo(g,h,i)perylene	85	U	ug/kg DB	85	760	U	ug/kg DB	760	780	U	ug/kg DB	780	860	U	ug/kg DB	860

(1) Cannot be separated from Diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

Sample No.	:	B3-2-5	B3-3-00	B3-3-00	B3-3-2.5
Lab Sample No	:	15928-84	15928-85	15928-86	15928-87
Matrix	:	SOIL	SOIL	SOIL	SOIL
Assoc Sample()	:	EB-4, TB-3, FB-1	EB-4, TB-3, FB-1	EB-4, TB-3, FB-1	EB-4, TB-3, FB-1

	Test Result	Flag	Unit		LLD	Test Result	Flag	Unit		LLD	Test Result	Flag	Unit		LLD	Test Result	Flag	Unit		LLD
VOLATILE ORGANICS (BY GC/MS)(DILUTIONS)																				
Chloromethane	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
Bromomethane	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
Vinyl Chloride	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
Chloroethane	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	1100	U	ug/kg	DB	1100
Methylene Chloride	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
Acetone	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	1900	U	ug/kg	DB	1900
Carbon Disulfide	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
1,1-Dichloroethene	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
1,1-Dichloroethane	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
1,2-Dichloroethene (total)	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
Chloroform	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
1,2-Dichloroethane	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
2-Butanone	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	1100	U	ug/kg	DB	1100
1,1,1-Trichloroethane	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
Carbon Tetrachloride	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
Vinyl Acetate	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
Bromodichloromethane	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
1,2-Dichloropropane	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
cis-1,3-Dichloropropene	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	1100	U	ug/kg	DB	1100
Trichloroethene	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
Dibromochloromethane	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	1100	U	ug/kg	DB	1100
1,1,2-Trichloroethane	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
Benzene	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
trans-1,3-Dichloropropene	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	1100	U	ug/kg	DB	1100
Bromoform	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
4-Methyl-2-Pentanone	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	1100	U	ug/kg	DB	1100
2-Hexanone	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	1100	U	ug/kg	DB	1100
Tetrachloroethene	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
1,1,2,2-Tetrachloroethane	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	1100	U	ug/kg	DB	1100
Toluene	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
Chlorobenzene	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	1100	U	ug/kg	DB	1100
Ethylbenzene	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	33000		ug/kg	DB	370
Styrene	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	370	U	ug/kg	DB	370
Total Xylenes	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	NT	U	ug/kg	DB	NT	60000	D	ug/kg	DB	370

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No. :	B3-4-0	B3-4-5	B3-5-0	B3-5-2.5
	Lab Sample No :	15928-88	15928-89	15928-90	15928-91
	Matrix :	SOIL	SOIL	SOIL	SOIL
	Assoc Sample() :	EB-5, TB-3, FB-1	EB-5, TB-3, FB-1	EB-5, TB-3, FB-1	EB-5, TB-3, FB-1

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
EP TOXICITY METALS																
Arsenic	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2
Selenium	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2
Mercury	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002
Silver	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Cadmium	0.01	U	mg/L	0.01	0.01	U	mg/L	0.01	0.01	U	mg/L	0.01	0.01	U	mg/L	0.01
Lead	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Chromium	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Barium	0.3		mg/L	0.1	0.1		mg/L	0.1	0.3		mg/L	0.1	0.1		mg/L	0.1
EP TOXICITY PESTICIDE/HERBICIDE COMPOUNDS																
Gamma-BHC (Lindane)	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05
Endrin	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1
Methoxychlor	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
Toxaphene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2,4-D	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2,4,5,-TP	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
INORGANICS																
Antimony	2.5	U	mg/kg DB	2.5	2.5	U	mg/kg DB	2.5	2.5	U	mg/kg DB	2.5	2.5	U	mg/kg DB	2.5
Thallium	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5
Lead	15.1	S	mg/kg DB	0.5	14		mg/kg DB	0.5	12		mg/kg DB	0.5	10		mg/kg DB	0.5
Arsenic	8.9		mg/kg DB	0.5	8.6		mg/kg DB	0.5	6.2		mg/kg DB	0.5	5.9		mg/kg DB	0.5
Selenium	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5
Mercury	0.1	U	mg/kg DB	0.1	0.1	U	mg/kg DB	0.1	0.1	U	mg/kg DB	0.1	0.1	U	mg/kg DB	0.1
Silver	0.6	U	mg/kg DB	0.6	0.6	U	mg/kg DB	0.6	0.6	U	mg/kg DB	0.6	0.6	U	mg/kg DB	0.6
Copper	18		mg/kg DB	1	19		mg/kg DB	1	10		mg/kg DB	1	12		mg/kg DB	1
Beryllium	1.0		mg/kg DB	0.1	1.1		mg/kg DB	0.1	0.4		mg/kg DB	0.1	0.6		mg/kg DB	0.1
Nickel	25		mg/kg DB	2	31		mg/kg DB	2	17		mg/kg DB	2	20		mg/kg DB	2
Cadmium	0.5	U	mg/kg DB	0.5	0.5		mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.6		mg/kg DB	0.5
Chromium	25		mg/kg DB	1	27		mg/kg DB	1	16		mg/kg DB	1	20		mg/kg DB	1
Zinc	87		mg/kg DB	1	110		mg/kg DB	1	52		mg/kg DB	1	65		mg/kg DB	1
TPH OIL & GREASE	20	U	mg/kg DB	20	20	U	mg/kg DB	20	79		mg/kg DB	20	25		mg/kg DB	20
TOTAL ORGANIC CARBON	2.4		% DB	0.1	NT		% DB	0.1	2.0		% DB	0.1	2.2		% DB	0.1
VOLATILE ORGANICS (BY GC/MS)																
Chloromethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Bromomethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Vinyl Chloride	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Chloroethane	6	U	ug/kg DB	6	6	U	ug/kg DB	6	6	U	ug/kg DB	6	6	U	ug/kg DB	6
Methylene Chloride	4		ug/kg DB	2	4		ug/kg DB	2	2	U	ug/kg DB	2	5		ug/kg DB	2
Acetone	10	U	ug/kg DB	10	10	U	ug/kg DB	10	10	U	ug/kg DB	10	10	U	ug/kg DB	10
Carbon Disulfide	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1-Dichloroethene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1-Dichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloroethene (total)	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No. :	B3-4-0				B3-4-5				B3-5-0				B3-5-2.5			
	Lab Sample No :	15928-88				15928-89				15928-90				15928-91			
	Matrix :	SOIL				SOIL				SOIL				SOIL			
	Assoc Sample() :	EB-5, TB-3, FB-1				EB-5, TB-3, FB-1				EB-5, TB-3, FB-1				EB-5, TB-3, FB-1			
		Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Chloroform		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloroethane		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
2-Butanone		6	U	ug/kg DB	6	6	U	ug/kg DB	6	6	U	ug/kg DB	6	6	U	ug/kg DB	6
1,1,1-Trichloroethane		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Carbon Tetrachloride		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Vinyl Acetate		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Bromodichloromethane		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloropropane		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
cis-1,3-Dichloropropene		6	U	ug/kg DB	6	6	U	ug/kg DB	6	6	U	ug/kg DB	6	6	U	ug/kg DB	6
Trichloroethene		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Dibromochloromethane		6	U	ug/kg DB	6	6	U	ug/kg DB	6	6	U	ug/kg DB	6	6	U	ug/kg DB	6
1,1,2-Trichloroethane		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Benzene		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
trans-1,3-Dichloroprcpene		6	U	ug/kg DB	6	6	U	ug/kg DB	6	6	U	ug/kg DB	6	6	U	ug/kg DB	6
Bromoform		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
4-Methyl-2-Pentanone		6	U	ug/kg DB	6	6	U	ug/kg DB	6	6	U	ug/kg DB	6	6	U	ug/kg DB	6
2-Hexanone		6	U	ug/kg DB	6	6	U	ug/kg DB	6	6	U	ug/kg DB	6	6	U	ug/kg DB	6
Tetrachloroethene		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1,2,2-Tetrachloroethane		6	U	ug/kg DB	6	6	U	ug/kg DB	6	6	U	ug/kg DB	6	6	U	ug/kg DB	6
Toluene		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Chlorobenzene		6	U	ug/kg DB	6	6	U	ug/kg DB	6	6	U	ug/kg DB	6	6	U	ug/kg DB	6
Ethylbenzene		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Styrene		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Total Xylenes		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
SEMI-VOLATILES (BY GC/MS)																	
Phenol		43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
Bis(2-chloroethyl)ether		43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
2-Chlorophenol		43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
1,3-Dichlorobenzene		43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
1,4-Dichlorobenzene		43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
Benzyl alcohol		43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
1,2-Dichlorobenzene		43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
2-Methylphenol		43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
Bis(2-chloroisopropyl)ether		43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
4-Methylphenol		43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
N-Nitroso-di-n-propylamine		43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
Hexachloroethane		86	U	ug/kg DB	86	85	U	ug/kg DB	85	150	U	ug/kg DB	150	81	U	ug/kg DB	81
Nitrobenzene		43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
Isophorone		43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
2-Nitrophenol		86	U	ug/kg DB	86	85	U	ug/kg DB	85	150	U	ug/kg DB	150	81	U	ug/kg DB	81
2,4-Dimethylphenol		43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
Benzoic Acid		1100	U	ug/kg DB	1100	1100	U	ug/kg DB	1100	1900	U	ug/kg DB	1900	1000	U	ug/kg DB	1000
Bis(2-chloroethoxy)methane		43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
2,4-Dichorophenol		86	U	ug/kg DB	86	85	U	ug/kg DB	85	150	U	ug/kg DB	150	81	U	ug/kg DB	81
1,2,4-Trichlorobenzene		43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
Napthalene		86	U	ug/kg DB	86	85	U	ug/kg DB	85	150	U	ug/kg DB	150	81	U	ug/kg DB	81
4-Chloroaniline		43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
Hexachlorobutadiene		43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
4-Chloro-3-methylphenol		86	U	ug/kg DB	86	85	U	ug/kg DB	85	150	U	ug/kg DB	150	81	U	ug/kg DB	81

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	Lab Sample No	Matrix	Assoc Sample()
	B3-4-0	15928-88	SOIL	EB-5, TB-3, FB-1
	B3-4-5	15928-89	SOIL	EB-5, TB-3, FB-1
	B3-5-0	15928-90	SOIL	EB-5, TB-3, FB-1
	B3-5-2.5	15928-91	SOIL	EB-5, TB-3, FB-1

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
2-Methylnapthalene	43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
Hexachlorocyclopentadiene	86	U	ug/kg DB	86	85	U	ug/kg DB	85	150	U	ug/kg DB	150	81	U	ug/kg DB	81
2,4,6-Trichlorophenol	86	U	ug/kg DB	86	85	U	ug/kg DB	85	150	U	ug/kg DB	150	81	U	ug/kg DB	81
2,4,5-Trichlorophenol	86	U	ug/kg DB	86	85	U	ug/kg DB	85	150	U	ug/kg DB	150	81	U	ug/kg DB	81
2-Chloronapthalene	43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
2-Nitroaniline	86	U	ug/kg DB	86	85	U	ug/kg DB	85	150	U	ug/kg DB	150	81	U	ug/kg DB	81
Dimethylphthalate	43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
Acenaphthylene	43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
2,6-Dinitrotoluene	86	U	ug/kg DB	86	85	U	ug/kg DB	85	150	U	ug/kg DB	150	81	U	ug/kg DB	81
3-Nitroaniline	220	U	ug/kg DB	220	210	U	ug/kg DB	210	390	U	ug/kg DB	390	200	U	ug/kg DB	200
Acenaphthene	43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
2,4-Dinitrophenol	430	U	ug/kg DB	430	420	U	ug/kg DB	420	770	U	ug/kg DB	770	400	U	ug/kg DB	400
4-Nitrophenol	430	U	ug/kg DB	430	420	U	ug/kg DB	420	770	U	ug/kg DB	770	400	U	ug/kg DB	400
Dibenzofuran	43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
2,4-Dinitrotoluene	86	U	ug/kg DB	86	85	U	ug/kg DB	85	150	U	ug/kg DB	150	81	U	ug/kg DB	81
Diethylphthalate	43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
4-Chlorophenyl-phenylether	43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
Fluorene	43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
4-Nitroaniline	86	U	ug/kg DB	86	85	U	ug/kg DB	85	150	U	ug/kg DB	150	81	U	ug/kg DB	81
4,6-Dinitro-2-Methylphenol	430	U	ug/kg DB	430	420	U	ug/kg DB	420	770	U	ug/kg DB	770	400	U	ug/kg DB	400
N-Nitrosodiphenylamire(1)	43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
4-Bromophenyl-phenylether	86	U	ug/kg DB	86	85	U	ug/kg DB	85	150	U	ug/kg DB	150	81	U	ug/kg DB	81
Hexachlorobenzene	86	U	ug/kg DB	86	85	U	ug/kg DB	85	150	U	ug/kg DB	150	81	U	ug/kg DB	81
Pentachlorophenol	430	U	ug/kg DB	430	420	U	ug/kg DB	420	770	U	ug/kg DB	770	400	U	ug/kg DB	400
Phenanthrene	43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
Anthracene	43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
Di-n-butylphthalate	43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
Fluoranthene	43	U	ug/kg DB	43	42	U	ug/kg DB	42	83		ug/kg DB	77	40	U	ug/kg DB	40
Pyrene	43	U	ug/kg DB	43	42	U	ug/kg DB	42	200		ug/kg DB	77	40	U	ug/kg DB	40
Butylbenzylphthalate	43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
3,3'-Dichlorobenzidine	430	U	ug/kg DB	430	420	U	ug/kg DB	420	770	U	ug/kg DB	770	400	U	ug/kg DB	400
Benzo(a)anthracene	43	U	ug/kg DB	43	42	U	ug/kg DB	42	180		ug/kg DB	77	40	U	ug/kg DB	40
Chrysene	43	U	ug/kg DB	43	42	U	ug/kg DB	42	230		ug/kg DB	77	40	U	ug/kg DB	40
Bis(2-ethylhexyl)phthalate	80	B	ug/kg DB	43	51	B	ug/kg DB	42	67	JB	ug/kg DB	77	50	B	ug/kg DB	40
Di-n-octyl phthalate	43	U	ug/kg DB	43	42	U	ug/kg DB	42	77	U	ug/kg DB	77	40	U	ug/kg DB	40
Benzo(b)flouranthene	86	U	ug/kg DB	86	85	U	ug/kg DB	85	220		ug/kg DB	150	81	U	ug/kg DB	81
Benzo(k)flouranthene	86	U	ug/kg DB	86	85	U	ug/kg DB	85	260		ug/kg DB	150	81	U	ug/kg DB	81
Benzo(a)pyrene	86	U	ug/kg DB	86	85	U	ug/kg DB	85	330		ug/kg DB	150	81	U	ug/kg DB	81
Indeno(1,2,3-cd)pyrene	86	U	ug/kg DB	86	85	U	ug/kg DB	85	180		ug/kg DB	150	81	U	ug/kg DB	81
Dibenzo(a,h)anthracene	86	U	ug/kg DB	86	85	U	ug/kg DB	85	150	U	ug/kg DB	150	81	U	ug/kg DB	81
Benzo(g,h,i)perylene	86	U	ug/kg DB	86	85	U	ug/kg DB	85	170		ug/kg DB	150	81	U	ug/kg DB	81

(1) Cannot be separated from Diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	BK-2-15	BK-2-20	BK-2-20RE	BK-2-25
	Lab Sample No	15928-115	15928-116	15928-116	15928-117
	Matrix	SOIL	SOIL	SOIL	SOIL
	Assoc Sample()	EB-11, TB-5, FB-2	EB-11, TB-5, FB-2	EB-11, TB-5, FB-2	EB-11, TB-5, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
EP TOXICITY METALS																
Arsenic	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	NT		mg/L	0.2	0.2	U	mg/L	0.2
Selenium	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	NT		mg/L	0.2	0.2	U	mg/L	0.2
Mercury	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002	NT		mg/L	0.002	0.002	U	mg/L	0.002
Silver	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	NT		mg/L	0.1	0.1	U	mg/L	0.1
Cadmium	0.01	U	mg/L	0.01	0.01	U	mg/L	0.01	NT		mg/L	0.01	0.01	U	mg/L	0.01
Lead	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	NT		mg/L	0.1	0.1	U	mg/L	0.1
Chromium	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	NT		mg/L	0.1	0.1	U	mg/L	0.1
Barium	0.3		mg/L	0.1	0.2		mg/L	0.1	NT		mg/L	0.1	0.2		mg/L	0.1
EP TOXICITY PESTICIDE/HERBICIDE COMPOUNDS																
Gamma-BHC (Lindane)	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05	NT		ug/L	0.05	0.05	U	ug/L	0.05
Endrin	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1	NT		ug/L	0.1	0.1	U	ug/L	0.1
Methoxychlor	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	NT		ug/L	0.5	0.5	U	ug/L	0.5
Toxaphene	1	U	ug/L	1	1	U	ug/L	1	NT		ug/L	1	1	U	ug/L	1
2,4-D	1	U	ug/L	1	1	U	ug/L	1	NT		ug/L	1	1	U	ug/L	1
2,4,5,-TP	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	NT		ug/L	0.5	0.5	U	ug/L	0.5
INORGANICS																
Antimony	2.5	U	mg/kg DB	2.5	2.5	U	mg/kg DB	2.5	NT		mg/kg DB	2.5	2.5	U	mg/kg DB	2.5
Thallium	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	NT		mg/kg DB	0.5	0.5	U	mg/kg DB	0.5
Lead	2.8		mg/kg DB	0.5	2.4		mg/kg DB	0.5	NT		mg/kg DB	0.5	3.1		mg/kg DB	0.5
Arsenic	2.2		mg/kg DB	0.5	1.8		mg/kg DB	0.5	NT		mg/kg DB	0.5	1.8		mg/kg DB	0.5
Selenium	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	NT		mg/kg DB	0.5	0.5	U	mg/kg DB	0.5
Mercury	0.1	U	mg/kg DB	0.1	0.1	U	mg/kg DB	0.1	NT		mg/kg DB	0.1	0.1	U	mg/kg DB	0.1
Silver	0.6	U	mg/kg DB	0.6	0.6	U	mg/kg DB	0.6	NT		mg/kg DB	0.6	0.6	U	mg/kg DB	0.6
Copper	5		mg/kg DB	1	3		mg/kg DB	1	NT		mg/kg DB	1	2		mg/kg DB	1
Beryllium	0.1	U	mg/kg DB	0.1	0.1	U	mg/kg DB	0.1	NT		mg/kg DB	0.1	0.1	U	mg/kg DB	0.1
Nickel	22		mg/kg DB	2	14		mg/kg DB	2	NT		mg/kg DB	2	12		mg/kg DB	2
Cadmium	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	NT		mg/kg DB	0.5	0.5	U	mg/kg DB	0.5
Chromium	8		mg/kg DB	1	9		mg/kg DB	1	NT		mg/kg DB	1	6		mg/kg DB	1
Zinc	20		mg/kg DB	1	17		mg/kg DB	1	NT		mg/kg DB	1	18		mg/kg DB	1
TPH OIL & GREASE	970		mg/kg DB	100	20	U	mg/kg DB	20	NT		mg/kg DB	20	31		mg/kg DB	20
TOTAL ORGANIC CARBON	1.2		% DB	0.1	1.4		% DB	0.1	NT		% DB	0.1	0.9		% DB	0.1
VOLATILE ORGANICS (BY GC/MS)																
Chloromethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Bromomethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Vinyl Chloride	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Chloroethane	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Methylene Chloride	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Acetone	55		ug/kg DB	8	66		ug/kg DB	8	58		ug/kg DB	8	41		ug/kg DB	8
Carbon Disulfide	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1-Dichloroethene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1-Dichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloroethene (total)	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	BK-2-15	BK-2-20	BK-2-20RE	BK-2-25
	Lab Sample No	15928-115	15928-116	15928-116	15928-117
	Matrix	SOIL	SOIL	SOIL	SOIL
	Assoc Sample()	EB-11, TB-5, FB-2	EB-11, TB-5, FB-2	EB-11, TB-5, FB-2	EB-11, TB-5, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Chloroform	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
2-Butanone	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
1,1,1-Trichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Carbon Tetrachloride	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Vinyl Acetate	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Bromodichloromethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloropropane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
cis-1,3-Dichloropropene	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Trichloroethene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Dibromochloromethane	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
1,1,2-Trichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Benzene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
trans-1,3-Dichloropropene	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Bromoform	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
4-Methyl-2-Pentanone	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
2-Hexanone	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Tetrachloroethene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1,2,2-Tetrachloroethane	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Toluene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Chlorobenzene	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Ethylbenzene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Styrene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Total Xylenes	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
SEMI-VOLATILES (BY GC/MS)																
Phenol	38	U	ug/kg DB	38	38	U	ug/kg DB	38	NT	U	ug/kg DB	38	39	U	ug/kg DB	39
Bis(2-chloroethyl)ether	38	U	ug/kg DB	38	38	U	ug/kg DB	38	NT	U	ug/kg DB	38	39	U	ug/kg DB	39
2-Chlorophenol	38	U	ug/kg DB	38	38	U	ug/kg DB	38	NT	U	ug/kg DB	38	39	U	ug/kg DB	39
1,3-Dichlorobenzene	38	U	ug/kg DB	38	38	U	ug/kg DB	38	NT	U	ug/kg DB	38	39	U	ug/kg DB	39
1,4-Dichlorobenzene	38	U	ug/kg DB	38	38	U	ug/kg DB	38	NT	U	ug/kg DB	38	39	U	ug/kg DB	39
Benzyl alcohol	38	U	ug/kg DB	38	38	U	ug/kg DB	38	NT	U	ug/kg DB	38	39	U	ug/kg DB	39
1,2-Dichlorobenzene	38	U	ug/kg DB	38	38	U	ug/kg DB	38	NT	U	ug/kg DB	38	39	U	ug/kg DB	39
2-Methylphenol	38	U	ug/kg DB	38	38	U	ug/kg DB	38	NT	U	ug/kg DB	38	39	U	ug/kg DB	39
Bis(2-chloroisopropyl)ether	38	U	ug/kg DB	38	38	U	ug/kg DB	38	NT	U	ug/kg DB	38	39	U	ug/kg DB	39
4-Methylphenol	38	U	ug/kg DB	38	38	U	ug/kg DB	38	NT	U	ug/kg DB	38	39	U	ug/kg DB	39
N-Nitroso-di-n-propylamine	38	U	ug/kg DB	38	38	U	ug/kg DB	38	NT	U	ug/kg DB	38	39	U	ug/kg DB	39
Hexachloroethane	77	U	ug/kg DB	77	76	U	ug/kg DB	76	NT	U	ug/kg DB	76	77	U	ug/kg DB	77
Nitrobenzene	38	U	ug/kg DB	38	38	U	ug/kg DB	38	NT	U	ug/kg DB	38	39	U	ug/kg DB	39
Isophorone	38	U	ug/kg DB	38	38	U	ug/kg DB	38	NT	U	ug/kg DB	38	39	U	ug/kg DB	39
2-Nitrophenol	77	U	ug/kg DB	77	76	U	ug/kg DB	76	NT	U	ug/kg DB	76	77	U	ug/kg DB	77
2,4-Dimethylphenol	38	U	ug/kg DB	38	38	U	ug/kg DB	38	NT	U	ug/kg DB	38	39	U	ug/kg DB	39
Benzoic Acid	960	U	ug/kg DB	960	960	U	ug/kg DB	960	NT	U	ug/kg DB	960	960	U	ug/kg DB	960
Bis(2-chloroethoxy)methane	38	U	ug/kg DB	38	38	U	ug/kg DB	38	NT	U	ug/kg DB	38	39	U	ug/kg DB	39
2,4-Dichorophenol	77	U	ug/kg DB	77	76	U	ug/kg DB	76	NT	U	ug/kg DB	76	77	U	ug/kg DB	77
1,2,4-Trichlorobenzene	38	U	ug/kg DB	38	38	U	ug/kg DB	38	NT	U	ug/kg DB	38	39	U	ug/kg DB	39
Napthalene	77	U	ug/kg DB	77	76	U	ug/kg DB	76	NT	U	ug/kg DB	76	77	U	ug/kg DB	77
4-Chloroaniline	38	U	ug/kg DB	38	38	U	ug/kg DB	38	NT	U	ug/kg DB	38	39	U	ug/kg DB	39
Hexachlorobutadiene	38	U	ug/kg DB	38	38	U	ug/kg DB	38	NT	U	ug/kg DB	38	39	U	ug/kg DB	39
4-Chloro-3-methylphenol	77	U	ug/kg DB	77	76	U	ug/kg DB	76	NT	U	ug/kg DB	76	77	U	ug/kg DB	77

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	BK-2-15	BK-2-20	BK-2-20RE	BK-2-25
Sample No.	BK-2-15	BK-2-20	BK-2-20RE	BK-2-25
Lab Sample No	15928-115	15928-116	15928-116	15928-117
Matrix	SOIL	SOIL	SOIL	SOIL
Assoc Sample()	EB-11, TB-5, FB-2	EB-11, TB-5, FB-2	EB-11, TB-5, FB-2	EB-11, TB-5, FB-2

	Test Result	Flag	Unit		LLD	Test Result	Flag	Unit		LLD	Test Result	Flag	Unit		LLD	Test Result	Flag	Unit		LLD
2-Methylnapthalene	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Hexachlorocyclopentadiene	77	U	ug/kg	DB	77	76	U	ug/kg	DB	76	NT	U	ug/kg	DB	76	77	U	ug/kg	DB	77
2,4,6-Trichlorophenol	77	U	ug/kg	DB	77	76	U	ug/kg	DB	76	NT	U	ug/kg	DB	76	77	U	ug/kg	DB	77
2,4,5-Trichlorophenol	77	U	ug/kg	DB	77	76	U	ug/kg	DB	76	NT	U	ug/kg	DB	76	77	U	ug/kg	DB	77
2-Chloronapthalene	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
2-Nitroaniline	77	U	ug/kg	DB	77	76	U	ug/kg	DB	76	NT	U	ug/kg	DB	76	77	U	ug/kg	DB	77
Dimethylphthalate	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Acenaphthylene	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
2,6-Dinitrotoluene	77	U	ug/kg	DB	77	76	U	ug/kg	DB	76	NT	U	ug/kg	DB	76	77	U	ug/kg	DB	77
3-Nitroaniline	190	U	ug/kg	DB	190	190	U	ug/kg	DB	190	NT	U	ug/kg	DB	190	190	U	ug/kg	DB	190
Acenaphthene	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
2,4-Dinitrophenol	380	U	ug/kg	DB	380	380	U	ug/kg	DB	380	NT	U	ug/kg	DB	380	390	U	ug/kg	DB	390
4-Nitrophenol	380	U	ug/kg	DB	380	380	U	ug/kg	DB	380	NT	U	ug/kg	DB	380	390	U	ug/kg	DB	390
Dibenzofuran	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
2,4-Dinitrotoluene	77	U	ug/kg	DB	77	76	U	ug/kg	DB	76	NT	U	ug/kg	DB	76	77	U	ug/kg	DB	77
Diethylphthalate	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
4-Chlorophenyl-phenylether	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Fluorene	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
4-Nitroaniline	77	U	ug/kg	DB	77	76	U	ug/kg	DB	76	NT	U	ug/kg	DB	76	77	U	ug/kg	DB	77
4,6-Dinitro-2-Methylphenol	380	U	ug/kg	DB	380	380	U	ug/kg	DB	380	NT	U	ug/kg	DB	380	390	U	ug/kg	DB	390
N-Nitrosodiphenylamine(1)	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
4-Bromophenyl-phenylether	77	U	ug/kg	DB	77	76	U	ug/kg	DB	76	NT	U	ug/kg	DB	76	77	U	ug/kg	DB	77
Hexachlorobenzene	77	U	ug/kg	DB	77	76	U	ug/kg	DB	76	NT	U	ug/kg	DB	76	77	U	ug/kg	DB	77
Pentachlorophenol	380	U	ug/kg	DB	380	380	U	ug/kg	DB	380	NT	U	ug/kg	DB	380	390	U	ug/kg	DB	390
Phenanthrene	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Anthracene	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Di-n-butylphthalate	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Fluoranthene	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Pyrene	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Butylbenzylphthalate	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
3,3'-Dichlorobenzidine	380	U	ug/kg	DB	380	380	U	ug/kg	DB	380	NT	U	ug/kg	DB	380	390	U	ug/kg	DB	390
Benzo(a)anthracene	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Chrysene	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Bis(2-ethylhexyl)phthalate	19	J	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Di-n-octyl phthalate	38	U	ug/kg	DB	38	38	U	ug/kg	DB	38	NT	U	ug/kg	DB	38	39	U	ug/kg	DB	39
Benzo(b)flouranthene	77	U	ug/kg	DB	77	76	U	ug/kg	DB	76	NT	U	ug/kg	DB	76	77	U	ug/kg	DB	77
Benzo(k)flouranthene	77	U	ug/kg	DB	77	76	U	ug/kg	DB	76	NT	U	ug/kg	DB	76	77	U	ug/kg	DB	77
Benzo(a)pyrene	77	U	ug/kg	DB	77	76	U	ug/kg	DB	76	NT	U	ug/kg	DB	76	77	U	ug/kg	DB	77
Indeno(1,2,3-cd)pyrene	77	U	ug/kg	DB	77	76	U	ug/kg	DB	76	NT	U	ug/kg	DB	76	77	U	ug/kg	DB	77
Dibenzo(a,h)anthracene	77	U	ug/kg	DB	77	76	U	ug/kg	DB	76	NT	U	ug/kg	DB	76	77	U	ug/kg	DB	77
Benzo(g,h,i)perylene	77	U	ug/kg	DB	77	76	U	ug/kg	DB	76	NT	U	ug/kg	DB	76	77	U	ug/kg	DB	77

(1) Cannot be separated from Diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No. :	BK3-0.5				BK3-5				BK3-20			
	Lab Sample No :	15928-118				15928-119				15928-120			
	Matrix :	SOIL				SOIL				SOIL			
	Assoc Sample() :	EB-11, TB-6, FB-2				EB-11, TB-6, FB-2				EB-11, TB-6, FB-2			
		Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
EP TOXICITY METALS													
Arsenic		0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2
Selenium		0.2	U	mg/L	0.2	0.2	U	mg/L	0.2	0.2	U	mg/L	0.2
Mercury		0.002	U	mg/L	0.002	0.002	U	mg/L	0.002	0.002	U	mg/L	0.002
Silver		0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Cadmium		0.01	U	mg/L	0.01	0.01	U	mg/L	0.01	0.01	U	mg/L	0.01
Lead		0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Chromium		0.1	U	mg/L	0.1	0.1	U	mg/L	0.1	0.1	U	mg/L	0.1
Barium		0.2		mg/L	0.1	0.2		mg/L	0.1	0.6		mg/L	0.1
EP TOXICITY PESTICIDE/HERBICIDE COMPOUNDS													
Gamma-BHC (Lindane)		0.05	U	ug/L	0.05	0.05	U	ug/L	0.05	0.05	U	ug/L	0.05
Endrin		0.1	U	ug/L	0.1	0.1	U	ug/L	0.1	0.1	U	ug/L	0.1
Methoxychlor		0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
Toxaphene		1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2,4-D		1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2,4,5,-TP		0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
INORGANICS													
Antimony		2.5	U	mg/kg DB	2.5	2.5	U	mg/kg DB	2.5	2.5	U	mg/kg DB	2.5
Thallium		0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5
Lead		11		mg/kg DB	0.5	7.2		mg/kg DB	0.5	2.5		mg/kg DB	0.5
Arsenic		6.4		mg/kg DB	0.5	5.4		mg/kg DB	0.5	3.3		mg/kg DB	0.5
Selenium		0.6		mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5
Mercury		0.1	U	mg/kg DB	0.1	0.1	U	mg/kg DB	0.1	0.1	U	mg/kg DB	0.1
Silver		0.6	U	mg/kg DB	0.6	0.6	U	mg/kg DB	0.6	0.6	U	mg/kg DB	0.6
Copper		13		mg/kg DB	1	6		mg/kg DB	1	4		mg/kg DB	1
Beryllium		0.6		mg/kg DB	0.1	0.3		mg/kg DB	0.1	0.1	U	mg/kg DB	0.1
Nickel		20		mg/kg DB	2	18		mg/kg DB	2	15		mg/kg DB	2
Cadmium		0.5		mg/kg DB	0.5	0.5	U	mg/kg DB	0.5	0.5	U	mg/kg DB	0.5
Chromium		22		mg/kg DB	1	10		mg/kg DB	1	11		mg/kg DB	1
Zinc		64		mg/kg DB	1	35		mg/kg DB	1	25		mg/kg DB	1
TPH OIL & GREASE		20	U	mg/kg DB	20	86		mg/kg DB	20	20	U	mg/kg DB	20
TOTAL ORGANIC CARBON		2.3		% DB	0.1	0.9		% DB	0.1	1.1		% DB	0.1
VOLATILE ORGANICS (BY GC/MS)													
Chloromethane		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Bromomethane		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Vinyl Chloride		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Chloroethane		5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Methylene Chloride		2	U	ug/kg DB	2	2	U	ug/kg DB	2	3		ug/kg DB	2
Acetone		9	U	ug/kg DB	9	37		ug/kg DB	8	49		ug/kg DB	8
Carbon Disulfide		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1-Dichloroethene		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1-Dichloroethane		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloroethene (total)		2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	BK3-0.5	Sample No.	BK3-5	Sample No.	BK3-20
	Lab Sample No	15928-118	Lab Sample No	15928-119	Lab Sample No	15928-120
	Matrix	SOIL	Matrix	SOIL	Matrix	SOIL
	Assoc Sample()	EB-11, TB-6, FB-2	Assoc Sample()	EB-11, TB-6, FB-2	Assoc Sample()	EB-11, TB-6, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Chloroform	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
2-Butanone	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
1,1,1-Trichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Carbon Tetrachloride	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Vinyl Acetate	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Bromodichloromethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,2-Dichloropropane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
cis-1,3-Dichloropropene	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Trichloroethene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Dibromochloromethane	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
1,1,2-Trichloroethane	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Benzene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
trans-1,3-Dichloropropene	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Bromoform	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
4-Methyl-2-Pentanone	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
2-Hexanone	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Tetrachloroethene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
1,1,2,2-Tetrachloroethane	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Toluene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Chlorobenzene	5	U	ug/kg DB	5	5	U	ug/kg DB	5	5	U	ug/kg DB	5
Ethylbenzene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Styrene	2	U	ug/kg DB	2	2	U	ug/kg DB	2	2	U	ug/kg DB	2
Total Xylenes	3		ug/kg DB	2	2		ug/kg DB	2	2	U	ug/kg DB	2
SEMI-VOLATILES (BY GC/MS)												
Phenol	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Bis(2-chloroethyl)ether	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
2-Chlorophenol	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
1,3-Dichlorobenzene	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
1,4-Dichlorobenzene	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Benzyl alcohol	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
1,2-Dichlorobenzene	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
2-Methylphenol	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Bis(2-chloroisopropyl)ether	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
4-Methylphenol	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
N-Nitroso-di-n-propylamine	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Hexachloroethane	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76
Nitrobenzene	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Isophorone	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
2-Nitrophenol	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76
2,4-Dimethylphenol	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Benzoic Acid	970	U	ug/kg DB	970	880	U	ug/kg DB	880	950	U	ug/kg DB	950
Bis(2-chloroethoxy)methane	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
2,4-Dichorophenol	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76
1,2,4-Trichlorobenzene	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Napthalene	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76
4-Chloroaniline	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Hexachlorobutadiene	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
4-Chloro-3-methylphenol	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

Sample No.	:	BK3-0.5	
Lab Sample No	:	15928-118	
Matrix	:	SOIL	
Assoc Sample()	:	EB-11, TB-6, FB-2	

Sample No.	:	BK3-5	
Lab Sample No	:	15928-119	
Matrix	:	SOIL	
Assoc Sample()	:	EB-11, TB-6, FB-2	

Sample No.	:	BK3-20	
Lab Sample No	:	15928-120	
Matrix	:	SOIL	
Assoc Sample()	:	EB-11, TB-6, FB-2	

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
2-Methylnapthalene	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Hexachlorocyclopentadiene	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76
2,4,6-Trichlorophenol	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76
2,4,5-Trichlorophenol	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76
2-Chloronapthalene	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
2-Nitroaniline	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76
Dimethylphthalate	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Acenaphthylene	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
2,6-Dinitrotoluene	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76
3-Nitroaniline	190	U	ug/kg DB	190	180	U	ug/kg DB	180	190	U	ug/kg DB	190
Acenaphthene	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
2,4-Dinitrophenol	390	U	ug/kg DB	390	350	U	ug/kg DB	350	380	U	ug/kg DB	380
4-Nitrophenol	390	U	ug/kg DB	390	350	U	ug/kg DB	350	380	U	ug/kg DB	380
Dibenzofuran	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
2,4-Dinitrotoluene	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76
Diethylphthalate	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
4-Chlorophenyl-phenylether	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Fluorene	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
4-Nitroaniline	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76
4,6-Dinitro-2-Methylphenol	390	U	ug/kg DB	390	350	U	ug/kg DB	350	380	U	ug/kg DB	380
N-Nitrosodiphenylamine(1)	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
4-Bromophenyl-phenylether	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76
Hexachlorobenzene	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76
Pentachlorophenol	390	U	ug/kg DB	390	350	U	ug/kg DB	350	380	U	ug/kg DB	380
Phenanthrene	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Anthracene	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Di-n-butylphthalate	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Fluoranthene	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Pyrene	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Butylbenzylphthalate	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
3,3'-Dichlorobenzidine	390	U	ug/kg DB	390	350	U	ug/kg DB	350	380	U	ug/kg DB	380
Benzo(a)anthracene	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Chrysene	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Bis(2-ethylhexyl)phthalate	21	J	ug/kg DB	39	17	J	ug/kg DB	35	52		ug/kg DB	38
Di-n-octyl phthalate	39	U	ug/kg DB	39	35	U	ug/kg DB	35	38	U	ug/kg DB	38
Benzo(b)flouranthene	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76
Benzo(k)flouranthene	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76
Benzo(a)pyrene	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76
Indeno(1,2,3-cd)pyrene	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76
Dibenzo(a,h)anthracene	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76
Benzo(g,h,i)perylene	77	U	ug/kg DB	77	70	U	ug/kg DB	70	76	U	ug/kg DB	76

(1) Cannot be separated from Diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No. : MW1-1 Lab Sample No. : 15928-31 Matrix : WATER Assoc Sample(s) : EB-12, TB-7, FB-2				Sample No. : MW1-3 Lab Sample No. : 15928-32 Matrix : WATER Assoc Sample(s) : EB-12, TB-7, FB-2				Sample No. : MW1-4 Lab Sample No. : 15928-33 Matrix : WATER Assoc Sample(s) : EB-12, TB-7, FB-2				Sample No. : MW1-4(D) Lab Sample No. : 15928-34 Matrix : WATER Assoc Sample(s) : EB-12, TB-7, FB-2			
	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
INORGANICS																
Dissolved Antimony	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5
Dissolved Thallium	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5
Dissolved Lead	1	U	ug/L	1	2.2		ug/L	1	3.2		ug/L	1	2.1		ug/L	1
Dissolved Arsenic	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Dissolved Selenium	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5
Total Mercury	NT		ug/L	0.2	NT		ug/L	0.2	NT		ug/L	0.2	NT		ug/L	0.2
Dissolved Silver	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Copper	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Beryllium	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Nickel	NT		ug/L	2	NT		ug/L	2	NT		ug/L	2	NT		ug/L	2
Dissolved Cadmium	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Chromium	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Zinc	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
TPH OIL & GREASE	0.5	U	ug/L	0.5	1.4		ug/L	0.5	3.3		ug/L	0.5	2.3		ug/L	0.5
VOLATILE ORGANICS (BY GC/MS)																
Chloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromomethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Methylene Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Acetone	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Carbon Disulfide	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethene (total)	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2-Butanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,1-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Carbon Tetrachloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Acetate	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromodichloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloropropane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
cis-1,3-Dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Trichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Dibromochloromethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,2-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Benzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Trans-1,3-dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Bromoform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
4-Methyl-2-Pentanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
2-Hexanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Tetrachloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1,2,2-Tetrachloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Toluene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chlorobenzene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Ethylbenzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Styrene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Total Xylenes	1	U	ug/L	1	1	U	ug/L	1	22		ug/L	1	52		ug/L	1

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	: MW1-1	Sample No.	: MW1-3	Sample No.	: MW1-4	Sample No.	: MW1-4(D)
	Lab Sample No.	: 15928-31	Lab Sample No.	: 15928-32	Lab Sample No.	: 15928-33	Lab Sample No.	: 15928-34
	Matrix	: WATER	Matrix	: WATER	Matrix	: WATER	Matrix	: WATER
	Assoc Sample(s)	: EB-12, TB-7, FB-2	Assoc Sample(s)	: EB-12, TB-7, FB-2	Assoc Sample(s)	: EB-12, TB-7, FB-2	Assoc Sample(s)	: EB-12, TB-7, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)																
Phenol	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Bis(2-chloroethyl)ether	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
2-Chlorophenol	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
1,3-Dichlorobenzene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
1,4-Dichlorobenzene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Benzyl alcohol	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
1,2-Dichlorobenzene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
2-Methylphenol	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Bis(2-chloroisopropyl)ether	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
4-Methylphenol	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
N-Nitroso-di-n-propylamine	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Hexachloroethane	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
Nitrobenzene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Isophorone	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
2-Nitrophenol	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
2,4-Dimethylphenol	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Benzoic Acid	NT	U	ug/L	NT	51	U	ug/L	51	51	U	ug/L	51	NT	U	ug/L	NT
Bis(2-chloroethoxy)methane	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
2,4-Dichorophenol	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
1,2,4-Trichlorobenzene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Napthalene	NT	U	ug/L	NT	14		ug/L	4	20		ug/L	4	NT	U	ug/L	NT
4-Chloroaniline	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Hexachlorobutadiene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
4-Chloro-3-methylphenol	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
2-Methylnapthalene	NT	U	ug/L	NT	2		ug/L	2	6		ug/L	2	NT	U	ug/L	NT
Hexachlorocyclopentadiene	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
2,4,6-Trichlorophenol	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
2,4,5-Trichlorophenol	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L		NT	U	ug/L	NT
2-Chloronapthalene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
2-Nitroaniline	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
Dimethyl phthalate	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Acenaphthylene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
2,6-Dinitrotoluene	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
3-Nitroaniline	NT	U	ug/L	NT	10	U	ug/L	10	10	U	ug/L	10	NT	U	ug/L	NT
Acenaphthene	NT	U	ug/L	NT	7		ug/L	2	2		ug/L	2	NT	U	ug/L	NT
2,4-Dinitrophenol	NT	U	ug/L	NT	21	U	ug/L	21	20	U	ug/L	20	NT	U	ug/L	NT
4-Nitrophenol	NT	U	ug/L	NT	21	U	ug/L	21	20	U	ug/L	20	NT	U	ug/L	NT
Dibenzofuran	NT	U	ug/L	NT	3		ug/L	2	1	J	ug/L	2	NT	U	ug/L	NT
2,4-Dinitrotoluene	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
Diethyl phthalate	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
4-Chlorophenyl phenylether	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Fluorene	NT	U	ug/L	NT	6		ug/L	2	2		ug/L	2	NT	U	ug/L	NT
4-Nitroaniline	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
4,6-Dinitro-2-Methylphenol	NT	U	ug/L	NT	21	U	ug/L	21	21	U	ug/L	21	NT	U	ug/L	NT
N-Nitrosodiphenylamine(1)	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
4-Bromophenyl phenylether	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
Hexachlorobenzene	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
Pentachlorophenol	NT	U	ug/L	NT	21	U	ug/L	21	21	U	ug/L	21	NT	U	ug/L	NT
Phenanthrene	NT	U	ug/L	NT	17		ug/L	2	2		ug/L	2	NT	U	ug/L	NT
Anthracene	NT	U	ug/L	NT	7		ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Di-n-butylphthalate	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Fluoranthene	NT	U	ug/L	NT	20		ug/L	2	4		ug/L	2	NT	U	ug/L	NT

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	MW1-1				Sample No.	MW1-3				Sample No.	MW1-4				Sample No.	MW1-4(D)			
	Lab Sample No.	15928-31				Lab Sample No.	15928-32				Lab Sample No.	15928-33				Lab Sample No.	15928-34			
	Matrix	WATER				Matrix	WATER				Matrix	WATER				Matrix	WATER			
	Assoc Sample(s)	EB-12, TB-7, FB-2				Assoc Sample(s)	EB-12, TB-7, FB-2				Assoc Sample(s)	EB-12, TB-7, FB-2				Assoc Sample(s)	EB-12, TB-7, FB-2			
		Test Result	Flag	Unit	LLD		Test Result	Flag	Unit	LLD		Test Result	Flag	Unit	LLD		Test Result	Flag	Unit	LLD
Pyrene		NT	U	ug/L	NT		22		ug/L	2		4		ug/L	2		NT	U	ug/L	NT
Butylbenzylphthalate		NT	U	ug/L	NT		2	U	ug/L	2		2	U	ug/L	2		NT	U	ug/L	NT
3,3'-Dichlorobenzidine		NT	U	ug/L	NT		21	U	ug/L	21		21	U	ug/L	21		NT	U	ug/L	NT
Benzo(a)anthracene		NT	U	ug/L	NT		7		ug/L	2		2	U	ug/L	2		NT	U	ug/L	NT
Chrysene		NT	U	ug/L	NT		7		ug/L	2		2	U	ug/L	2		NT	U	ug/L	NT
Bis(2-ethylhexyl)phthalate		NT	U	ug/L	NT		44		ug/L	2		27		ug/L	2		NT	U	ug/L	NT
Di-n-octyl phthalate		NT	U	ug/L	NT		2	U	ug/L	2		2	U	ug/L	2		NT	U	ug/L	NT
Benzo(b)flouranthene		NT	U	ug/L	NT		6	X	ug/L	4		4	U	ug/L	4		NT	U	ug/L	NT
Benzo(k)flouranthene		NT	U	ug/L	NT		6	X	ug/L	4		4	U	ug/L	4		NT	U	ug/L	NT
Benzo(a)pyrene		NT	U	ug/L	NT		4	J	ug/L	4		4	U	ug/L	4		NT	U	ug/L	NT
Indeno(1,2,3-cd)pyrene		NT	U	ug/L	NT		1	J	ug/L	4		4	U	ug/L	4		NT	U	ug/L	NT
Dibenzo(a,h)anthracene		NT	U	ug/L	NT		4	U	ug/L	4		4	U	ug/L	4		NT	U	ug/L	NT
Benzo(g,h,i)perylene		NT	U	ug/L	NT		4	U	ug/L	4		4	U	ug/L	4		NT	U	ug/L	NT
(1) Cannot be separated from diphenylamine																				
OTHER INORGANICS																				
Dissolved Iron		37		ug/L	5		5600		ug/L	5		NT	U	ug/L	5		NT	U	ug/L	5
Dissolved Manganese		2100		ug/L	1		2000		ug/L	1		NT	U	ug/L	1		NT	U	ug/L	1
Dissolved Sodium		12		mg/L	5		21		mg/L	5		NT	U	mg/L	5		NT	U	mg/L	5
Dissolved Calcium		83		mg/L	5		160		mg/L	5		NT	U	mg/L	5		NT	U	mg/L	5
Dissolved Magnesium		17		mg/L	5		32		mg/L	5		NT	U	mg/L	5		NT	U	mg/L	5
Sulfate		59		mg/L	1		110		mg/L	1		NT	U	mg/L	1		NT	U	mg/L	1
Chloride		15		mg/L	1		34		mg/L	1		NT	U	mg/L	1		NT	U	mg/L	1
Nitrate		0.3		mg/L	0.2		0.2	U	mg/L	0.2		NT	U	mg/L	0.2		NT	U	mg/L	0.2
Total Dissolved Solids		460		mg/L	1		670		mg/L	1		NT	U	mg/L	1		NT	U	mg/L	1
Total Suspended Solids		52		mg/L	1		340		mg/L	1		NT	U	mg/L	1		NT	U	mg/L	1
Total Alkalinity		420		mg/L	2		420		mg/L	2		NT	U	mg/L	2		NT	U	mg/L	2
Bicarbonate Alkalinity		420		mg/L	2		420		mg/L	2		NT	U	mg/L	2		NT	U	mg/L	2
Carbonate Alkalinity		0		mg/L	2		0		mg/L	2		NT	U	mg/L	2		NT	U	mg/L	2
pH		6.9		Units	NA		6.9		Units	NA		NT		Units	NA		NT		Units	NA

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	: MW1-1	Sample No.	: MW1-3	Sample No.	: MW1-4	Sample No.	: MW1-4(D)
	Lab Sample No.	: 15928-31RE	Lab Sample No.	: 15928-32RE	Lab Sample No.	: 15928-33RE	Lab Sample No.	: 15928-34R
	Matrix	: WATER	Matrix	: WATER	Matrix	: WATER	Matrix	: WATER
	Assoc Sample(s)	: EB-12, TB-7, FB-2	Assoc Sample(s)	: EB-12, TB-7, FB-2	Assoc Sample(s)	: EB-12, TB-7, FB-2	Assoc Sample(s)	: EB-12, TB-7, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)																
Phenol	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
Bis(2-chloroethyl)ether	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
2-Chlorophenol	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
1,3-Dichlorobenzene	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
1,4-Dichlorobenzene	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
Benzyl alcohol	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
1,2-Dichlorobenzene	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
2-Methylphenol	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
Bis(2-chloroisopropyl)ether	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
4-Methylphenol	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
N-Nitroso-di-n-propylamine	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
Hexachloroethane	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4
Nitrobenzene	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
Isophorone	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
2-Nitrophenol	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4
2,4-Dimethylphenol	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	5		ug/L	2
Benzoic Acid	52	U	ug/L	52	NT	U	ug/L	NT	NT	U	ug/L	NT	51	U	ug/L	51
Bis(2-chloroethoxy)methane	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
2,4-Dichorophenol	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4
1,2,4-Trichlorobenzene	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
Napthalene	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	14		ug/L	4
4-Chloroaniline	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
Hexachlorobutadiene	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
4-Chloro-3-methylphenol	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4
2-Methylnapthalene	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	4		ug/L	2
Hexachlorocyclopentadiene	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4
2,4,6-Trichlorophenol	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4
2,4,5-Trichlorophenol	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4
2-Chloronapthalene	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
2-Nitroaniline	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4
Dimethyl phthalate	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
Acenaphthylene	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
2,6-Dinitrotoluene	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4
3-Nitroaniline	10	U	ug/L	10	NT	U	ug/L	NT	NT	U	ug/L	NT	10	U	ug/L	10
Acenaphthene	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2		ug/L	2
2,4-Dinitrophenol	21	U	ug/L	21	NT	U	ug/L	NT	NT	U	ug/L	NT	20	U	ug/L	20
4-Nitrophenol	21	U	ug/L	21	NT	U	ug/L	NT	NT	U	ug/L	NT	20	U	ug/L	20
Dibenzofuran	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	1	J	ug/L	2
2,4-Dinitrotoluene	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4
Diethyl phthalate	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
4-Chlorophenyl phenylether	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
Fluorene	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2		ug/L	2
4-Nitroaniline	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4
4,6-Dinitro-2-Methylphenol	21	U	ug/L	21	NT	U	ug/L	NT	NT	U	ug/L	NT	20	U	ug/L	20
N-Nitrosodiphenylamine(1)	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
4-Bromophenyl phenylether	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4
Hexachlorobenzene	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4
Pentachlorophenol	21	U	ug/L	21	NT	U	ug/L	NT	NT	U	ug/L	NT	20	U	ug/L	20
Phenanthrene	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
Anthracene	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
Di-n-butylphthalate	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
Fluoranthene	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	3		ug/L	2
Pyrene	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	3		ug/L	2
Butylbenzylphthalate	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	: MW1-1	Sample No.	: MW1-3	Sample No.	: MW1-4	Sample No.	: MW1-4(D)
	Lab Sample No.	: 15928-31RE	Lab Sample No.	: 15928-32RE	Lab Sample No.	: 15928-33RE	Lab Sample No.	: 15928-34RE
	Matrix	: WATER	Matrix	: WATER	Matrix	: WATER	Matrix	: WATER
	Assoc Sample(s)	: EB-12, TB-7, FB-2	Assoc Sample(s)	: EB-12, TB-7, FB-2	Assoc Sample(s)	: EB-12, TB-7, FB-2	Assoc Sample(s)	: EB-12, TB-7, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
3,3'-Dichlorobenzidine	21	U	ug/L	21	NT	U	ug/L	NT	NT	U	ug/L	NT	20	U	ug/L	20
Benzo(a)anthracene	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
Chrysene	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
Bis(2-ethylhexyl)phthalate	5	B	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	17	B	ug/L	2
Di-n-octyl phthalate	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2
Benzo(b)flouranthene	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4
Benzo(k)flouranthene	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4
Benzo(a)pyrene	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4
Indeno(1,2,3-cd)pyrene	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4
Dibenzo(a,h)anthracene	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4
Benzo(g,h,i)perylene	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4

(1) Cannot be separated from diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	MW1-5				MW1-6				MW1-7				MW1-8			
Sample No.	MW1-5				MW1-6				MW1-7				MW1-8			
Lab Sample No.	15928-35				15928-36				15928-37				15928-38			
Matrix	WATER				WATER				WATER				WATER			
Assoc Sample(s)	EB-12, TB-7, FB-2				EB-12, TB-7, FB-2				EB-12, TB-7, FB-2				EB-12, TB-7, FB-2			
	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
INORGANICS																
Dissolved Antimony	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5
Dissolved Thallium	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5
Dissolved Lead	2		ug/L	1	3.7		ug/L	1	2.4		ug/L	1	1.4		ug/L	1
Dissolved Arsenic	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Dissolved Selenium	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5
Total Mercury	NT		ug/L	0.2	NT		ug/L	0.2	NT		ug/L	0.2	NT		ug/L	0.2
Dissolved Silver	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Copper	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Beryllium	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Nickel	NT		ug/L	2	NT		ug/L	2	NT		ug/L	2	NT		ug/L	2
Dissolved Cadmium	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Chromium	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Zinc	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
TPH OIL & GREASE	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.6		ug/L	0.5	1.1		ug/L	0.5
VOLATILE ORGANICS (BY GC/MS)																
Chloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromomethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Methylene Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Acetone	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Carbon Disulfide	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethene (total)	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2-Butanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,1-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Carbon Tetrachloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Acetate	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromodichloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloropropane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
cis-1,3-Dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Trichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Dibromochloromethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,2-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Benzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Trans-1,3-dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Bromoform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
4-Methyl-2-Pentanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
2-Hexanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Tetrachloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1,2,2-Tetrachloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Toluene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chlorobenzene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Ethylbenzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Styrene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Total Xylenes	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	MW1-5				MW1-6				MW1-7				MW1-8			
Sample No.	MW1-5				MW1-6				MW1-7				MW1-8			
Lab Sample No.	15928-35				15928-36				15928-37				15928-38			
Matrix	WATER				WATER				WATER				WATER			
Assoc Sample(s)	EB-12, TB-7, FB-2				EB-12, TB-7, FB-2				EB-12, TB-7, FB-2				EB-12, TB-7, FB-2			
	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)																
Phenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroethyl)ether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Chlorophenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
1,3-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
1,4-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Benzyl alcohol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
1,2-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Methylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroisopropyl)ether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Methylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
N-Nitroso-di-n-propylamine	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Hexachloroethane	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Nitrobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Isophorone	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Nitrophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2,4-Dimethylphenol	2	U	ug/L	2	2	U	ug/L	2	2		ug/L	2	2	U	ug/L	2
Benzoic Acid	53	U	ug/L	53	52	U	ug/L	52	52	U	ug/L	52	51	U	ug/L	51
Bis(2-chloroethoxy)methane	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,4-Dichorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
1,2,4-Trichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Napthalene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4		ug/L	4
4-Chloroaniline	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Hexachlorobutadiene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Chloro-3-methylphenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2-Methylnapthalene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	6		ug/L	2
Hexachlorocyclopentadiene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2,4,6-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2,4,5-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2-Chloronapthalene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Nitroaniline	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Dimethyl phthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Acenaphthylene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,6-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
3-Nitroaniline	11	U	ug/L	11	10	U	ug/L	10	10	U	ug/L	10	10	U	ug/L	10
Acenaphthene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrophenol	21	U	ug/L	21	21	U	ug/L	21	21	U	ug/L	21	21	U	ug/L	21
4-Nitrophenol	21	U	ug/L	21	21	U	ug/L	21	21	U	ug/L	21	21	U	ug/L	21
Dibenzofuran	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Diethyl phthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Chlorophenyl phenylether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Fluorene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Nitroaniline	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
4,6-Dinitro-2-Methylphenol	21	U	ug/L	21	21	U	ug/L	21	21	U	ug/L	21	21	U	ug/L	21
N-Nitrosodiphenylamine(1)	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Bromophenyl phenylether	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Hexachlorobenzene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Pentachlorophenol	21	U	ug/L	21	21	U	ug/L	21	21	U	ug/L	21	21	U	ug/L	21
Phenanthrene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Anthracene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Di-n-butylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Fluoranthene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	Lab Sample No.	Matrix	Assoc Sample(s)	Test Result	Flag	Unit	LLD
	MW1-5	15928-35	WATER	EB-12, TB-7, FB-2				
Pyrene					2	U	ug/L	2
Butylbenzylphthalate					2	U	ug/L	2
3,3'-Dichlorobenzidine					21	U	ug/L	21
Benzo(a)anthracene					2	U	ug/L	2
Chrysene					2	U	ug/L	2
Bis(2-ethylhexyl)phthalate					8		ug/L	2
Di-n-octyl phthalate					2	U	ug/L	2
Benzo(b)flouranthene					4	U	ug/L	4
Benzo(k)flouranthene					4	U	ug/L	4
Benzo(a)pyrene					4	U	ug/L	4
Indeno(1,2,3-cd)pyrene					4	U	ug/L	4
Dibenzo(a,h)anthracene					4	U	ug/L	4
Benzo(g,h,i)perylene					4	U	ug/L	4
OTHER INORGANICS								
Dissolved Iron					NT	U	ug/L	5
Dissolved Manganese					NT	U	ug/L	1
Dissolved Sodium					NT	U	mg/L	5
Dissolved Calcium					NT	U	mg/L	5
Dissolved Magnesium					NT	U	mg/L	5
Sulfate					NT	U	mg/L	1
Chloride					NT	U	mg/L	1
Nitrate					NT	U	mg/L	0.2
Total Dissolved Solids					NT	U	mg/L	1
Total Suspended Solids					NT	U	mg/L	1
Total Alkalinity					NT	U	mg/L	2
Bicarbonate Alkalinity					NT	U	mg/L	2
Carbonate Alkalinity					NT	U	mg/L	2
pH					NT		Units	NA

	Sample No.	Lab Sample No.	Matrix	Assoc Sample(s)	Test Result	Flag	Unit	LLD
	MW1-6	15928-36	WATER	EB-12, TB-7, FB-2				
Pyrene					2	U	ug/L	2
Butylbenzylphthalate					2	U	ug/L	2
3,3'-Dichlorobenzidine					21	U	ug/L	21
Benzo(a)anthracene					2	U	ug/L	2
Chrysene					2	U	ug/L	2
Bis(2-ethylhexyl)phthalate					57		ug/L	2
Di-n-octyl phthalate					2	U	ug/L	2
Benzo(b)flouranthene					4	U	ug/L	4
Benzo(k)flouranthene					4	U	ug/L	4
Benzo(a)pyrene					4	U	ug/L	4
Indeno(1,2,3-cd)pyrene					4	U	ug/L	4
Dibenzo(a,h)anthracene					4	U	ug/L	4
Benzo(g,h,i)perylene					4	U	ug/L	4
OTHER INORGANICS								
Dissolved Iron					NT	U	ug/L	5
Dissolved Manganese					NT	U	ug/L	1
Dissolved Sodium					NT	U	mg/L	5
Dissolved Calcium					NT	U	mg/L	5
Dissolved Magnesium					NT	U	mg/L	5
Sulfate					NT	U	mg/L	1
Chloride					NT	U	mg/L	1
Nitrate					NT	U	mg/L	0.2
Total Dissolved Solids					NT	U	mg/L	1
Total Suspended Solids					NT	U	mg/L	1
Total Alkalinity					NT	U	mg/L	2
Bicarbonate Alkalinity					NT	U	mg/L	2
Carbonate Alkalinity					NT	U	mg/L	2
pH					NT		Units	NA

	Sample No.	Lab Sample No.	Matrix	Assoc Sample(s)	Test Result	Flag	Unit	LLD
	MW1-7	15928-37	WATER	EB-12, TB-7, FB-2				
Pyrene					2	U	ug/L	2
Butylbenzylphthalate					2	U	ug/L	2
3,3'-Dichlorobenzidine					21	U	ug/L	21
Benzo(a)anthracene					2	U	ug/L	2
Chrysene					2	U	ug/L	2
Bis(2-ethylhexyl)phthalate					14		ug/L	2
Di-n-octyl phthalate					2	U	ug/L	2
Benzo(b)flouranthene					4	U	ug/L	4
Benzo(k)flouranthene					4	U	ug/L	4
Benzo(a)pyrene					4	U	ug/L	4
Indeno(1,2,3-cd)pyrene					4	U	ug/L	4
Dibenzo(a,h)anthracene					4	U	ug/L	4
Benzo(g,h,i)perylene					4	U	ug/L	4
OTHER INORGANICS								
Dissolved Iron					NT	U	ug/L	5
Dissolved Manganese					NT	U	ug/L	1
Dissolved Sodium					NT	U	mg/L	5
Dissolved Calcium					NT	U	mg/L	5
Dissolved Magnesium					NT	U	mg/L	5
Sulfate					NT	U	mg/L	1
Chloride					NT	U	mg/L	1
Nitrate					NT	U	mg/L	0.2
Total Dissolved Solids					NT	U	mg/L	1
Total Suspended Solids					NT	U	mg/L	1
Total Alkalinity					NT	U	mg/L	2
Bicarbonate Alkalinity					NT	U	mg/L	2
Carbonate Alkalinity					NT	U	mg/L	2
pH					NT		Units	NA

	Sample No.	Lab Sample No.	Matrix	Assoc Sample(s)	Test Result	Flag	Unit	LLD
	MW1-8	15928-38	WATER	EB-12, TB-7, FB-2				
Pyrene					2	U	ug/L	2
Butylbenzylphthalate					2	U	ug/L	2
3,3'-Dichlorobenzidine					21	U	ug/L	21
Benzo(a)anthracene					2	U	ug/L	2
Chrysene					2	U	ug/L	2
Bis(2-ethylhexyl)phthalate					4		ug/L	2
Di-n-octyl phthalate					2	U	ug/L	2
Benzo(b)flouranthene					4	U	ug/L	4
Benzo(k)flouranthene					4	U	ug/L	4
Benzo(a)pyrene					4	U	ug/L	4
Indeno(1,2,3-cd)pyrene					4	U	ug/L	4
Dibenzo(a,h)anthracene					4	U	ug/L	4
Benzo(g,h,i)perylene					4	U	ug/L	4
OTHER INORGANICS								
Dissolved Iron					NT	U	ug/L	5
Dissolved Manganese					NT	U	ug/L	1
Dissolved Sodium					NT	U	mg/L	5
Dissolved Calcium					NT	U	mg/L	5
Dissolved Magnesium					NT	U	mg/L	5
Sulfate					NT	U	mg/L	1
Chloride					NT	U	mg/L	1
Nitrate					NT	U	mg/L	0.2
Total Dissolved Solids					NT	U	mg/L	1
Total Suspended Solids					NT	U	mg/L	1
Total Alkalinity					NT	U	mg/L	2
Bicarbonate Alkalinity					NT	U	mg/L	2
Carbonate Alkalinity					NT	U	mg/L	2
pH					NT		Units	NA

(1) Cannot be separated from diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	MW1-5	MW1-6	MW1-7	MW1-8
Sample No.	MW1-5	MW1-6	MW1-7	MW1-8
Lab Sample No.	15928-35RE	15928-36RE	15928-37RE	15928-38RE
Matrix	WATER	WATER	WATER	WATER
Assoc Sample(s)	EB-12, TB-7, FB-2	EB-12, TB-7, FB-2	EB-12, TB-7, FB-2	EB-12, TB-7, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)																
Phenol	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
Bis(2-chloroethyl)ether	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
2-Chlorophenol	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
1,3-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
1,4-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
Benzyl alcohol	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
1,2-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
2-Methylphenol	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
Bis(2-chloroisopropyl)eth	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
4-Methylphenol	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
N-Nitroso-di-n-propylamin	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
Hexachloroethane	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
Nitrobenzene	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
Isophorone	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
2-Nitrophenol	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
2,4-Dimethylphenol	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
Benzoic Acid	50	U	ug/L	50	52	U	ug/L	52	NT	U	ug/L	NT	50	U	ug/L	50
Bis(2-chloroethoxy)methan	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
2,4-Dichorophenol	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
1,2,4-Trichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
Napthalene	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
4-Chloroaniline	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
Hexachlorobutadiene	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
4-Chloro-3-methylphenol	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
2-Methylnapthalene	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
Hexachlorocyclopentadiene	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
2,4,6-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
2,4,5-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
2-Chloronapthalene	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
2-Nitroaniline	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
Dimethyl phthalate	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
Acenaphthylene	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
2,6-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
3-Nitroaniline	10	U	ug/L	10	10	U	ug/L	10	NT	U	ug/L	NT	10	U	ug/L	10
Acenaphthene	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
2,4-Dinitrophenol	20	U	ug/L	20	21	U	ug/L	21	NT	U	ug/L	NT	20	U	ug/L	20
4-Nitrophenol	20	U	ug/L	20	21	U	ug/L	21	NT	U	ug/L	NT	20	U	ug/L	20
Dibenzofuran	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
2,4-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
Diethyl phthalate	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
4-Chlorophenyl phenylethe	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
Fluorene	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
4-Nitroaniline	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
4,6-Dinitro-2-Methylpheno	20	U	ug/L	20	21	U	ug/L	21	NT	U	ug/L	NT	20	U	ug/L	20
N-Nitrosodiphenylamine(1)	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
4-Bromophenyl phenylether	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
Hexachlorobenzene	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
Pentachlorophenol	20	U	ug/L	20	21	U	ug/L	21	NT	U	ug/L	NT	20	U	ug/L	20
Phenanthrene	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
Anthracene	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
Di-n-butylphthalate	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
Fluoranthene	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
Pyrene	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	Lab Sample No.	Matrix	Assoc Sample(s)
	MW1-5	15928-35RE	WATER	EB-12, TB-7, FB-2
	MW1-6	15928-36RE	WATER	EB-12, TB-7, FB-2
	MW1-7	15928-37RE	WATER	EB-12, TB-7, FB-2
	MW1-8	15928-38RE	WATER	EB-12, TB-7, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Butylbenzylphthalate	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
3,3'-Dichlorobenzidine	20	U	ug/L	20	21	U	ug/L	21	NT	U	ug/L	NT	20	U	ug/L	20
Benzo(a)anthracene	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
Chrysene	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
Bis(2-ethylhexyl)phthalat	3	B	ug/L	2	12		ug/L	2	NT	U	ug/L	NT	2	B	ug/L	2
Di-n-octyl phthalate	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT	2	U	ug/L	2
Benzo(b)flouranthene	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
Benzo(k)flouranthene	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
Benzo(a)pyrene	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
Indeno(1,2,3-cd)pyrene	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
Dibenzo(a,h)anthracene	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4
Benzo(g,h,i)perylene	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT	4	U	ug/L	4

(1) Cannot be separated from diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	: MW1-9				Sample No.	: MW1-10				Sample No.	: MW1-11				Sample No.	: MW1-12			
	Lab Sample No.	: 15928-39				Lab Sample No.	: 15928-40				Lab Sample No.	: 15928-41				Lab Sample No.	: 15928-42			
	Matrix	: WATER				Matrix	: WATER				Matrix	: WATER				Matrix	: WATER			
	Assoc Sample(s)	: EB-12, TB-7, FB-2				Assoc Sample(s)	: EB-12, TB-7, FB-2				Assoc Sample(s)	: EB-12, TB-7, FB-2				Assoc Sample(s)	: EB-12, TB-7, FB-2			
	Test Result	Flag	Unit	LLD		Test Result	Flag	Unit	LLD		Test Result	Flag	Unit	LLD		Test Result	Flag	Unit	LLD	
INORGANICS																				
Dissolved Antimony	NT		ug/L	5		NT		ug/L	5		NT		ug/L	5		NT		ug/L	5	
Dissolved Thallium	NT		ug/L	5		NT		ug/L	5		NT		ug/L	5		NT		ug/L	5	
Dissolved Lead	1		ug/L	1		3.2		ug/L	1		6.3		ug/L	1		2.1		ug/L	1	
Dissolved Arsenic	5	U	ug/L	5		5	U	ug/L	5		5	U	ug/L	5		5		ug/L	5	
Dissolved Selenium	NT		ug/L	5		NT		ug/L	5		NT		ug/L	5		NT		ug/L	5	
Total Mercury	NT		ug/L	0.2		NT		ug/L	0.2		NT		ug/L	0.2		NT		ug/L	0.2	
Dissolved Silver	NT		ug/L	1		NT		ug/L	1		NT		ug/L	1		NT		ug/L	1	
Dissolved Copper	NT		ug/L	1		NT		ug/L	1		NT		ug/L	1		NT		ug/L	1	
Dissolved Beryllium	NT		ug/L	1		NT		ug/L	1		NT		ug/L	1		NT		ug/L	1	
Dissolved Nickel	NT		ug/L	2		NT		ug/L	2		NT		ug/L	2		NT		ug/L	2	
Dissolved Cadmium	NT		ug/L	1		NT		ug/L	1		NT		ug/L	1		NT		ug/L	1	
Dissolved Chromium	NT		ug/L	1		NT		ug/L	1		NT		ug/L	1		NT		ug/L	1	
Dissolved Zinc	NT		ug/L	1		NT		ug/L	1		NT		ug/L	1		NT		ug/L	1	
TPH OIL & GREASE	0.5	U	ug/L	0.5		0.5	U	ug/L	0.5		0.5	U	ug/L	0.5		2.2		ug/L	0.5	
VOLATILE ORGANICS (BY GC/MS)																				
Chloromethane	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
Bromomethane	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
Vinyl Chloride	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
Chloroethane	3	U	ug/L	3		3	U	ug/L	3		3	U	ug/L	3		3	U	ug/L	3	
Methylene Chloride	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
Acetone	5	U	ug/L	5		5	U	ug/L	5		5	U	ug/L	5		5	U	ug/L	5	
Carbon Disulfide	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
1,1-Dichloroethene	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
1,1-Dichloroethane	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
1,2-Dichloroethene (total)	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
Chloroform	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
1,2-Dichloroethane	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
2-Butanone	3	U	ug/L	3		3	U	ug/L	3		3	U	ug/L	3		3	U	ug/L	3	
1,1,1-Trichloroethane	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
Carbon Tetrachloride	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
Vinyl Acetate	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
Bromodichloromethane	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
1,2-Dichloropropane	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
cis-1,3-Dichloropropene	3	U	ug/L	3		3	U	ug/L	3		3	U	ug/L	3		3	U	ug/L	3	
Trichloroethene	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
Dibromochloromethane	3	U	ug/L	3		3	U	ug/L	3		3	U	ug/L	3		3	U	ug/L	3	
1,1,2-Trichloroethane	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
Benzene	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
Trans-1,3-dichloropropene	3	U	ug/L	3		3	U	ug/L	3		3	U	ug/L	3		3	U	ug/L	3	
Bromoform	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
4-Methyl-2-Pentanone	3	U	ug/L	3		3	U	ug/L	3		3	U	ug/L	3		3	U	ug/L	3	
2-Hexanone	3	U	ug/L	3		3	U	ug/L	3		3	U	ug/L	3		3	U	ug/L	3	
Tetrachloroethene	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
1,1,2,2-Tetrachloroethane	3	U	ug/L	3		3	U	ug/L	3		3	U	ug/L	3		3	U	ug/L	3	
Toluene	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
Chlorobenzene	3	U	ug/L	3		3	U	ug/L	3		3	U	ug/L	3		3	U	ug/L	3	
Ethylbenzene	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		170		ug/L	1	
Styrene	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1	
Total Xylenes	1	U	ug/L	1		1	U	ug/L	1		1	U	ug/L	1		840		ug/L	1	

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	MW1-9				Sample No.	MW1-10				Sample No.	MW1-11				Sample No.	MW1-12DIL			
	Lab Sample No.	15928-39				Lab Sample No.	15928-40				Lab Sample No.	15928-41				Lab Sample No.	15928-42			
	Matrix	WATER				Matrix	WATER				Matrix	WATER				Matrix	WATER			
	Assoc Sample(s)	EB-12, TB-7, FB-2				Assoc Sample(s)	EB-12, TB-7, FB-2				Assoc Sample(s)	EB-12, TB-7, FB-2				Assoc Sample(s)	EB-12, TB-7, FB-2			
	Test Result	Flag	Unit		LLD	Test Result	Flag	Unit		LLD	Test Result	Flag	Unit		LLD	Test Result	Flag	Unit		LLD
INORGANICS																				
Dissolved Antimony	NT		ug/L		5	NT		ug/L		5	NT		ug/L		5	NT		ug/L		5
Dissolved Thallium	NT		ug/L		5	NT		ug/L		5	NT		ug/L		5	NT		ug/L		5
Dissolved Lead	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1
Dissolved Arsenic	NT		ug/L		5	NT		ug/L		5	NT		ug/L		5	NT		ug/L		5
Dissolved Selenium	NT		ug/L		5	NT		ug/L		5	NT		ug/L		5	NT		ug/L		5
Total Mercury	NT		ug/L		0.2	NT		ug/L		0.2	NT		ug/L		0.2	NT		ug/L		0.2
Dissolved Silver	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1
Dissolved Copper	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1
Dissolved Beryllium	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1
Dissolved Nickel	NT		ug/L		2	NT		ug/L		2	NT		ug/L		2	NT		ug/L		2
Dissolved Cadmium	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1
Dissolved Chromium	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1
Dissolved Zinc	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1
TPH OIL & GREASE	NT		ug/L		0.5	NT		ug/L		0.5	NT		ug/L		0.5	NT		ug/L		0.5
VOLATILE ORGANICS (BY GC/MS)																				
Chloromethane	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
Bromomethane	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
Vinyl Chloride	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
Chloroethane	NT		ug/L		3	NT		ug/L		3	NT		ug/L		3	15	U	ug/L		15
Methylene Chloride	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
Acetone	NT		ug/L		5	NT		ug/L		5	NT		ug/L		5	25	U	ug/L		25
Carbon Disulfide	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
1,1-Dichloroethene	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
1,1-Dichloroethane	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
1,2-Dichloroethene (total)	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
Chloroform	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
1,2-Dichloroethane	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
2-Butanone	NT		ug/L		3	NT		ug/L		3	NT		ug/L		3	15	U	ug/L		15
1,1,1-Trichloroethane	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
Carbon Tetrachloride	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
Vinyl Acetate	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
Bromodichloromethane	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
1,2-Dichloropropane	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
cis-1,3-Dichloropropene	NT		ug/L		3	NT		ug/L		3	NT		ug/L		3	15	U	ug/L		15
Trichloroethene	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
Dibromochloromethane	NT		ug/L		3	NT		ug/L		3	NT		ug/L		3	15	U	ug/L		15
1,1,2-Trichloroethane	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
Benzene	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
Trans-1,3-dichloropropene	NT		ug/L		3	NT		ug/L		3	NT		ug/L		3	15	U	ug/L		15
Bromoform	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
4-Methyl-2-Pentanone	NT		ug/L		3	NT		ug/L		3	NT		ug/L		3	15	U	ug/L		15
2-Hexanone	NT		ug/L		3	NT		ug/L		3	NT		ug/L		3	15	U	ug/L		15
Tetrachloroethene	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
1,1,2,2-Tetrachloroethane	NT		ug/L		3	NT		ug/L		3	NT		ug/L		3	15	U	ug/L		15
Toluene	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
Chlorobenzene	NT		ug/L		3	NT		ug/L		3	NT		ug/L		3	15	U	ug/L		15
Ethylbenzene	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	160	D	ug/L		5
Styrene	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	5	U	ug/L		5
Total Xylenes	NT		ug/L		1	NT		ug/L		1	NT		ug/L		1	1100	D	ug/L		5

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	MW1-9				MW1-10				MW1-11				MW1-12			
Sample No.	MW1-9				MW1-10				MW1-11				MW1-12			
Lab Sample No.	15928-39				15928-40				15928-41				15928-42			
Matrix	WATER				WATER				WATER				WATER			
Assoc Sample(s)	EB-12, TB-7, FB-2				EB-12, TB-7, FB-2				EB-12, TB-7, FB-2				EB-12, TB-7, FB-2			
	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)																
Phenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroethyl)ether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Chlorophenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
1,3-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
1,4-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Benzyl alcohol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
1,2-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Methylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroisopropyl)ether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Methylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
N-Nitroso-di-n-propylamine	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Hexachloroethane	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Nitrobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Isophorone	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Nitrophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2,4-Dimethylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Benzoic Acid	52	U	ug/L	52	52	U	ug/L	52	52	U	ug/L	52	52	U	ug/L	52
Bis(2-chloroethoxy)methane	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,4-Dichorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
1,2,4-Trichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Napthalene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	84		ug/L	4
4-Chloroaniline	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Hexachlorobutadiene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Chloro-3-methylphenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2-Methylnapthalene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	48		ug/L	2
Hexachlorocyclopentadiene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2,4,6-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2,4,5-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2-Chloronapthalene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Nitroaniline	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Dimethyl phthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Acenaphthylene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,6-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
3-Nitroaniline	10	U	ug/L	10	10	U	ug/L	10	10	U	ug/L	10	10	U	ug/L	10
Acenaphthene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrophenol	21	U	ug/L	21	21	U	ug/L	21	21	U	ug/L	21	21	U	ug/L	21
4-Nitrophenol	21	U	ug/L	21	21	U	ug/L	21	21	U	ug/L	21	21	U	ug/L	21
Dibenzofuran	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Diethyl phthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Chlorophenyl phenylether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Fluorene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	1	J	ug/L	2
4-Nitroaniline	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
4,6-Dinitro-2-Methylphenol	21	U	ug/L	21	21	U	ug/L	21	21	U	ug/L	21	21	U	ug/L	21
N-Nitrosodiphenylamine(1)	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Bromophenyl phenylether	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Hexachlorobenzene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Pentachlorophenol	21	U	ug/L	21	21	U	ug/L	21	21	U	ug/L	21	21	U	ug/L	21
Phenanthrene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Anthracene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Di-n-butylphthalate	2	U	ug/L	2	2	U	ug/L	2	4		ug/L	2	2	U	ug/L	2
Fluoranthene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	MW1-9	MW1-10	MW1-11	MW1-12
Sample No.	MW1-9	MW1-10	MW1-11	MW1-12
Lab Sample No.	15928-39RE	15928-40RE	15928-41RE	15928-42RE
Matrix	WATER	WATER	WATER	WATER
Assoc Sample(s)	EB-12, TB-7, FB-2	EB-12, TB-7, FB-2	EB-12, TB-7, FB-2	EB-12, TB-7, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)																
Phenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Bis(2-chloroethyl)ether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
2-Chlorophenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
1,3-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
1,4-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Benzyl alcohol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
1,2-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
2-Methylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Bis(2-chloroisopropyl)ether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
4-Methylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
N-Nitroso-di-n-propylamine	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Hexachloroethane	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
Nitrobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Isophorone	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
2-Nitrophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
2,4-Dimethylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Benzoic Acid	51	U	ug/L	51	52	U	ug/L	52	54	U	ug/L	54	NT	U	ug/L	NT
Bis(2-chloroethoxy)methane	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
2,4-Dichorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
1,2,4-Trichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Napthalene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
4-Chloroaniline	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Hexachlorobutadiene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
4-Chloro-3-methylphenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
2-Methylnapthalene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Hexachlorocyclopentadiene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
2,4,6-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
2,4,5-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
2-Chloronapthalene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
2-Nitroaniline	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
Dimethyl phthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Acenaphthylene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
2,6-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
3-Nitroaniline	10	U	ug/L	10	10	U	ug/L	10	11	U	ug/L	11	NT	U	ug/L	NT
Acenaphthene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
2,4-Dinitrophenol	20	U	ug/L	20	21	U	ug/L	21	22	U	ug/L	22	NT	U	ug/L	NT
4-Nitrophenol	20	U	ug/L	20	21	U	ug/L	21	22	U	ug/L	22	NT	U	ug/L	NT
Dibenzofuran	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
2,4-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
Diethyl phthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
4-Chlorophenyl phenylether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Fluorene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
4-Nitroaniline	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
4,6-Dinitro-2-Methylphenol	20	U	ug/L	20	21	U	ug/L	21	22	U	ug/L	22	NT	U	ug/L	NT
N-Nitrosodiphenylamine(1)	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
4-Bromophenyl phenylether	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
Hexachlorobenzene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
Pentachlorophenol	20	U	ug/L	20	21	U	ug/L	21	22	U	ug/L	22	NT	U	ug/L	NT
Phenanthrene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Anthracene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Di-n-butylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Fluoranthene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Pyrene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	MW1-9	MW1-10	MW1-11	MW1-12
	Lab Sample No.	15928-39RE	15928-40RE	15928-41RE	15928-42RE
	Matrix	WATER	WATER	WATER	WATER
	Assoc Sample(s)	EB-12, TB-7, FB-2	EB-12, TB-7, FB-2	EB-12, TB-7, FB-2	EB-12, TB-7, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Butylbenzylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
3,3'-Dichlorobenzidine	20	U	ug/L	20	21	U	ug/L	21	22	U	ug/L	22	NT	U	ug/L	NT
Benzo(a)anthracene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Chrysene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Bis(2-ethylhexyl)phthalate	2	B	ug/L	2	48	B	ug/L	2	17	B	ug/L	2	NT	U	ug/L	NT
Di-n-octyl phthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	NT	U	ug/L	NT
Benzo(b)flouranthene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
Benzo(k)flouranthene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
Benzo(a)pyrene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
Indeno(1,2,3-cd)pyrene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
Dibenzo(a,h)anthracene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT
Benzo(g,h,i)perylene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	NT	U	ug/L	NT

(1) Cannot be separated from diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	: MW1-12D	Sample No.	: MW1-13	Sample No.	: MW1-14
	Lab Sample No.	: 15928-43	Lab Sample No.	: 15928-18	Lab Sample No.	: 15928-19
	Matrix	: WATER	Matrix	: WATER	Matrix	: WATER
	Assoc Sample(s)	: EB-12, TB-7, FB-2	Assoc Sample(s)	: EB-12, TB-7, FB-2	Assoc Sample(s)	: EB-12, TB-7, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
INORGANICS												
Dissolved Antimony	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5
Dissolved Thallium	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5
Dissolved Lead	2.2		ug/L	1	9.7		ug/L	1	1.4		ug/L	1
Dissolved Arsenic	6		ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Dissolved Selenium	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5
Total Mercury	NT		ug/L	0.2	NT		ug/L	0.2	NT		ug/L	0.2
Dissolved Silver	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Copper	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Beryllium	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Nickel	NT		ug/L	2	NT		ug/L	2	NT		ug/L	2
Dissolved Cadmium	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Chromium	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Zinc	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
TPH OIL & GREASE	2.0		ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
VOLATILE ORGANICS (BY GC/MS)												
Chloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromomethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Methylene Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Acetone	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Carbon Disulfide	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethene (total)	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2-Butanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,1-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Carbon Tetrachloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Acetate	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromodichloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloropropane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
cis-1,3-Dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Trichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Dibromochloromethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,2-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Benzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Trans-1,3-dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Bromoform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
4-Methyl-2-Pentanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
2-Hexanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Tetrachloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1,2,2-Tetrachloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Toluene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chlorobenzene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Ethyloenzene	32		ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Styrene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Total Xylenes	220		ug/L	1	1	U	ug/L	1	1	U	ug/L	1

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No. : MW1-12D				Sample No. : MW1-13				Sample No. : MW1-14			
	Lab Sample No. : 15928-43				Lab Sample No. : 15928-18				Lab Sample No. : 15928-19			
	Matrix : WATER				Matrix : WATER				Matrix : WATER			
	Assoc Sample(s) : EB-12, TB-7, FB-2				Assoc Sample(s) : EB-12, TB-7, FB-2				Assoc Sample(s) : EB-12, TB-7, FB-2			
	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)												
Phenol	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroethyl)ether	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
2-Chlorophenol	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
1,3-Dichlorobenzene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
1,4-Dichlorobenzene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Benzyl alcohol	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
1,2-Dichlorobenzene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
2-Methylphenol	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroisopropyl)ether	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
4-Methylphenol	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
N-Nitroso-di-n-propylamine	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Hexachloroethane	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Nitrobenzene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Isophorone	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
2-Nitrophenol	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
2,4-Dimethylphenol	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Benzoic Acid	NT	U	ug/L	NT	51	U	ug/L	51	50	U	ug/L	50
Bis(2-chloroethoxy)methane	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
2,4-Dichorophenol	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
1,2,4-Trichlorobenzene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Napthalene	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
4-Chloroaniline	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Hexachlorobutadiene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
4-Chloro-3-methylphenol	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
2-Methylnapthalene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Hexachlorocyclopentadiene	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
2,4,6-Trichlorophenol	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
2,4,5-Trichlorophenol	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
2-Chloronapthalene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
2-Nitroaniline	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Dimethyl phthalate	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Acenaphthylene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
2,6-Dinitrotoluene	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
3-Nitroaniline	NT	U	ug/L	NT	10	U	ug/L	10	10	U	ug/L	10
Acenaphthene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrophenol	NT	U	ug/L	NT	20	U	ug/L	20	20	U	ug/L	20
4-Nitrophenol	NT	U	ug/L	NT	20	U	ug/L	20	20	U	ug/L	20
Dibenzofuran	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrotoluene	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Diethyl phthalate	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
4-Chlorophenyl phenylether	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Fluorene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
4-Nitroaniline	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
4,6-Dinitro-2-Methylphenol	NT	U	ug/L	NT	20	U	ug/L	20	20	U	ug/L	20
N-Nitrosodiphenylamine(1)	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
4-Bromophenyl phenylether	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Hexachlorobenzene	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Pentachlorophenol	NT	U	ug/L	NT	20	U	ug/L	20	20	U	ug/L	20
Phenanthrene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Anthracene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Di-n-butylphthalate	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Fluoranthene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	MW1-12D				MW1-13				MW1-14			
Sample No.	MW1-12D				MW1-13				MW1-14			
Lab Sample No.	15928-43				15928-18				15928-19			
Matrix	WATER				WATER				WATER			
Assoc Sample(s)	EB-12, TB-7, FB-2				EB-12, TB-7, FB-2				EB-12, TB-7, FB-2			
	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Pyrene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Butylbenzylphthalate	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
3,3'-Dichlorobenzidine	NT	U	ug/L	NT	20	U	ug/L	20	20	U	ug/L	20
Benzo(a)anthracene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Chrysene	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Bis(2-ethylhexyl)phthalate	NT	U	ug/L	NT	5		ug/L	2	34		ug/L	2
Di-n-octyl phthalate	NT	U	ug/L	NT	2	U	ug/L	2	2		ug/L	2
Benzo(b)flouranthene	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Benzo(k)flouranthene	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Benzo(a)pyrene	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Indeno(1,2,3-cd)pyrene	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Dibenzo(a,h)anthracene	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Benzo(g,h,i)perylene	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
(1) Cannot be separated from diphenylamine												
OTHER INORGANICS												
Dissolved Iron	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5
Dissolved Manganese	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Sodium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Dissolved Calcium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Dissolved Magnesium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Sulfate	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Chloride	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Nitrate	NT	U	mg/L	0.2	NT	U	mg/L	0.2	NT	U	mg/L	0.2
Total Dissolved Solids	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Total Suspended Solids	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Total Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
Bicarbonate Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
Carbonate Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
pH	NT		Units	NA	NT		Units	NA	NT		Units	NA

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	MW1-12D	MW1-13	MW1-14
Sample No.			
Lab Sample No.	15928-43RE	15928-18RE	15928-19RE
Matrix	WATER	WATER	WATER
Assoc Sample(s)	EB-12, TB-7, FB-2	EB-12, TB-7, FB-2	EB-12, TB-7, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)												
Phenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroethyl)ether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Chlorophenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
1,3-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
1,4-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Benzyl alcohol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
1,2-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Methylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroisopropyl)ether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Methylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
N-Nitroso-di-n-propylamine	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Hexachloroethane	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Nitrobenzcne	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Isophorone	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Nitrophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2,4-Dimethylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Benzoic Acid	50	U	ug/L	50	51	U	ug/L	51	51	U	ug/L	51
Bis(2-chloroethoxy)methane	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,4-Dichorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
1,2,4-Trichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Napthalene	72		ug/L	4	4	U	ug/L	4	4	U	ug/L	4
4-Chloroaniline	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Hexachlorobutadiene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Chloro-3-methylphenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2-Methylnapthalene	46		ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Hexachlorocyclopentadiene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2,4,6-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2,4,5-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2-Chloronapthalene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Nitroaniline	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Dimethyl phthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Acenaphthylene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,6-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
3-Nitroaniline	10	U	ug/L	10	10	U	ug/L	10	10	U	ug/L	10
Acenaphthene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrophenol	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20
4-Nitrophenol	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20
Dibenzofuran	1	J	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Diethyl phthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Chlorophenyl phenylether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Fluorene	1	J	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Nitroaniline	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
4,6-Dinitro-2-Methylphenol	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20
N-Nitrosodiphenylamine(1)	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Bromophenyl phenylether	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Hexachlorobenzene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Pentachlorophenol	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20
Phenanthrene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Anthracene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Di-n-butylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Fluoranthene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Pyrene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	: MW1-12D	Sample No.	: MW1-13	Sample No.	: MW1-14
	Lab Sample No.	: 15928-43 RE	Lab Sample No.	: 15928-18RE	Lab Sample No.	: 15928-19RE
	Matrix	: WATER	Matrix	: WATER	Matrix	: WATER
	Assoc Sample(s)	: EB-12, TB-7, FB-2	Assoc Sample(s)	: EB-12, TB-7, FB-2	Assoc Sample(s)	: EB-12, TB-7, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Butylbenzylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
3,3'-Dichlorobenzidine	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20
Benzo(a)anthracene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Chrysene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Bis(2-ethylhexyl)phthalate	19	B	ug/L	2	7	B	ug/L	2	40	B	ug/L	2
Di-n-octyl phthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Benzo(b)flouranthene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Benzo(k)flouranthene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Benzo(a)pyrene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Indeno(1,2,3-cd)pyrene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Dibenzo(a,h)anthracene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Benzo(g,h,i)perylene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4

(1) Cannot be separated from diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	: MW3-1	: MW3-2	: MW3-2D	: MW3-3
	Lab Sample No.	: 15928-20	: 15928-21	: 15928-22	: 15928-23
	Matrix	: WATER	: WATER	: WATER	: WATER
	Assoc Sample(s)	: EB-13, TB-8, FB-2	: EB-13, TB-8, FB-2	: EB-13, TB-8, FB-2	: EB-14, TB-8, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
INORGANICS																
Dissolved Antimony	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Dissolved Thallium	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Dissolved Lead	11		ug/L	1	5.2		ug/L	1	4.0		ug/L	1	16		ug/L	1
Dissolved Arsenic	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5	30		ug/L	5
Dissolved Selenium	6		ug/L	5	5	U	ug/L	5	5	U	ug/L	5	5		ug/L	5
Total Mercury	0.2	U	ug/L	0.2	0.2	U	ug/L	0.2	0.2	U	ug/L	0.2	0.2	U	ug/L	0.2
Dissolved Silver	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Dissolved Copper	8		ug/L	1	5		ug/L	1	5		ug/L	1	14		ug/L	1
Dissolved Beryllium	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Dissolved Nickel	34		ug/L	2	15		ug/L	2	14		ug/L	2	27		ug/L	2
Dissolved Cadmium	1	U	ug/L	1	1	U	ug/L	1	1		ug/L	1	1		ug/L	1
Dissolved Chromium	2		ug/L	1	3		ug/L	1	3		ug/L	1	7		ug/L	1
Dissolved Zinc	53		ug/L	1	24		ug/L	1	22		ug/L	1	47		ug/L	1
TPH OIL & GREASE	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
VOLATILE ORGANICS (BY GC/MS)																
Chloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromomethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Methylene Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Acetone	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Carbon Disulfide	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethene (total)	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2-Butanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,1-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Carbon Tetrachloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Acetate	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromodichloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloropropane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
cis-1,3-Dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Trichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Dibromochloromethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,2-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Benzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Trans-1,3-dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Bromoform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
4-Methyl-2-Pentanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
2-Hexanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Tetrachloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1,2,2-Tetrachloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Toluene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chlorobenzene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Ethylbenzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Styrene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Total Xylenes	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	: MW3-1	Sample No.	: MW3-2	Sample No.	: MW3-2D	Sample No.	: MW3-3
	Lab Sample No.	: 15928-20	Lab Sample No.	: 15928-21	Lab Sample No.	: 15928-22	Lab Sample No.	: 15928-23
	Matrix	: WATER	Matrix	: WATER	Matrix	: WATER	Matrix	: WATER
	Assoc Sample(s)	: EB-13, TB-8, FB-2	Assoc Sample(s)	: EB-13, TB-8, FB-2	Assoc Sample(s)	: EB-13, TB-8, FB-2	Assoc Sample(s)	: EB-14, TB-8, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)																
Phenol	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroethyl)ether	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
2-Chlorophenol	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
1,3-Dichlorobenzene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
1,4-Dichlorobenzene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Benzyl alcohol	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
1,2-Dichlorobenzene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
2-Methylphenol	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroisopropyl)ether	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
4-Methylphenol	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
N-Nitroso-di-n-propylamine	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Hexachloroethane	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Nitrobenzene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Isophorone	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
2-Nitrophenol	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
2,4-Dimethylphenol	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Benzoic Acid	51	U	ug/L	51	67	U	ug/L	67	53	U	ug/L	53	50	U	ug/L	50
Bis(2-chloroethoxy)methane	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
2,4-Dichorophenol	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
1,2,4-Trichlorobenzene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Napthalene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
4-Chloroaniline	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Hexachlorobutadiene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
4-Chloro-3-methylphenol	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
2-Methylnapthalene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Hexachlorocyclopentadiene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
2,4,6-Trichlorophenol	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
2,4,5-Trichlorophenol	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
2-Chloronapthalene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
2-Nitroaniline	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Dimethyl phthalate	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Acenaphthylene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
2,6-Dinitrotoluene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
3-Nitroaniline	10	U	ug/L	10	13	U	ug/L	13	11	U	ug/L	11	10	U	ug/L	10
Acenaphthene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrophenol	20	U	ug/L	20	27	U	ug/L	27	21	U	ug/L	21	20	U	ug/L	20
4-Nitrophenol	20	U	ug/L	20	27	U	ug/L	27	21	U	ug/L	21	20	U	ug/L	20
Dibenzofuran	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrotoluene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Diethyl phthalate	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
4-Chlorophenyl phenylether	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Fluorene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
4-Nitroaniline	4	U	ug/L	4	5	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
4,6-Dinitro-2-Methylphenol	20	U	ug/L	20	27	U	ug/L	21	21	U	ug/L	21	20	U	ug/L	20
N-Nitrosodiphenylamine(1)	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
4-Bromophenyl phenylether	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Hexachlorobenzene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Pentachlorophenol	20	U	ug/L	20	27	U	ug/L	27	21	U	ug/L	21	20	U	ug/L	20
Phenanthrene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Anthracene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Di-n-butylphthalate	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Fluoranthene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	MW3-1	MW3-2	MW3-2D	MW3-3
Sample No.	MW3-1	MW3-2	MW3-2D	MW3-3
Lab Sample No.	15928-20	15928-21	15928-22	15928-23
Matrix	WATER	WATER	WATER	WATER
Assoc Sample(s)	EB-13, TB-8, FB-2	EB-13, TB-8, FB-2	EB-13, TB-8, FB-2	EB-14, TB-8, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Pyrene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Butylbenzylphthalate	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
3,3'-Dichlorobenzidine	20	U	ug/L	20	27	U	ug/L	27	21	U	ug/L	21	20	U	ug/L	20
Benzo(a)anthracene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Chrysene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Bis(2-ethylhexyl)phthalate	21		ug/L	2	5		ug/L	3	3		ug/L	2	3		ug/L	2
Di-n-octyl phthalate	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Benzo(b)flouranthene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Benzo(k)flouranthene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Benzo(a)pyrene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Indeno(1,2,3-cd)pyrene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Dibenzo(a,h)anthracene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Benzo(g,h,i)perylene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
(1) Cannot be separated from diphenylamine																
OTHER INORGANICS																
Dissolved Iron	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5
Dissolved Manganese	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Sodium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Dissolved Calcium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Dissolved Magnesium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Sulfate	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Chloride	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Nitrate	NT	U	mg/L	0.2	NT	U	mg/L	0.2	NT	U	mg/L	0.2	NT	U	mg/L	0.2
Total Dissolved Solids	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Total Suspended Solids	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Total Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
Bicarbonate Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
Carbonate Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
pH	NT		Units	NA	NT		Units	NA	NT		Units	NA	NT		Units	NA

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	MW3-1	MW3-2	MW3-2D	MW3-3
Sample No.	MW3-1	MW3-2	MW3-2D	MW3-3
Lab Sample No.	15928-20RE	15928-21RE	15928-22RE	15928-23-E
Matrix	WATER	WATER	WATER	WATER
Assoc Sample(s)	EB-13, TB-8, FB-2	EB-13, TB-8, FB-2	EB-13, TB-8, FB-2	EB-14, TB-8, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)																
Phenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
Bis(2-chloroethyl)ether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
2-Chlorophenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
1,3-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
1,4-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
Benzyl alcohol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
1,2-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
2-Methylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
Bis(2-chloroisopropyl)ether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
4-Methylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
N-Nitroso-di-n-propylamine	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
Hexachloroethane	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
Nitrobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
Isophorone	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
2-Nitrophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
2,4-Dimethylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
Benzoic Acid	51	U	ug/L	51	53	U	ug/L	53	51	U	ug/L	51	67	U	ug/L	67
Bis(2-chloroethoxy)methane	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
2,4-Dichorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
1,2,4-Trichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
Napthalene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
4-Chloroaniline	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
Hexachlorobutadiene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
4-Chloro-3-methylphenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
2-Methylnapthalene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
Hexachlorocyclopentadiene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
2,4,6-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
2,4,5-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
2-Chloronapthalene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
2-Nitroaniline	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
Dimethyl phthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
Acenaphthylene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
2,6-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
3-Nitroaniline	10	U	ug/L	10	11	U	ug/L	11	10	U	ug/L	10	13	U	ug/L	13
Acenaphthene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
2,4-Dinitrophenol	20	U	ug/L	20	21	U	ug/L	21	21	U	ug/L	21	27	U	ug/L	27
4-Nitrophenol	20	U	ug/L	20	21	U	ug/L	21	21	U	ug/L	21	27	U	ug/L	27
Dibenzofuran	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
2,4-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
Diethyl phthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
4-Chlorophenyl phenylether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
Fluorene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
4-Nitroaniline	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
4,6-Dinitro-2-Methylphenol	20	U	ug/L	20	21	U	ug/L	21	21	U	ug/L	21	27	U	ug/L	27
N-Nitrosodiphenylamine(1)	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
4-Bromophenyl phenylether	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
Hexachlorobenzene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
Pentachlorophenol	20	U	ug/L	20	21	U	ug/L	21	21	U	ug/L	21	27	U	ug/L	27
Phenanthrene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
Anthracene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
Di-n-butylphthalate	2	U	ug/L	2	2	U	ug/L	2	1	J	ug/L	2	3	U	ug/L	3
Fluoranthene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
Pyrene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	MW3-1	MW3-2	MW3-2D	MW3-3
Sample No.	MW3-1	MW3-2	MW3-2D	MW3-3
Lab Sample No.	15928-20RE	15928-21RE	15928-22RE	15928-23RE
Matrix	WATER	WATER	WATER	WATER
Assoc Sample(s)	EB-13, TB-8, FB-2	EB-13, TB-8, FB-2	EB-13, TB-8, FB-2	EB-14, TB-8, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Butylbenzylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
3,3'-Dichlorobenzidine	20	U	ug/L	20	21	U	ug/L	21	21	U	ug/L	21	27	U	ug/L	27
Benzo(a)anthracene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
Chrysene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
Bis(2-ethylhexyl)phthalate	3	B	ug/L	2	3	B	ug/L	2	2	B	ug/L	2	3	B	ug/L	3
Di-n-octyl phthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	3	U	ug/L	3
Benzo(b)flouranthene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
Benzo(k)flouranthene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
Benzo(a)pyrene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
Indeno(1,2,3-cd)pyrene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
Dibenzo(a,h)anthracene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5
Benzo(g,h,i)perylene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	5	U	ug/L	5

(1) Cannot be separated from diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	: MW3-4	Sample No.	: MW3-5
	Lab Sample No.	: 15928-24	Lab Sample No.	: 15928-25
	Matrix	: WATER	Matrix	: WATER
	Assoc Sample(s)	: EB-14, TB-8, FB-2	Assoc Sample(s)	: EB-13, TB-8, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
INORGANICS								
Dissolved Antimony	5	U	ug/L	5	5	U	ug/L	5
Dissolved Thallium	5	U	ug/L	5	5	U	ug/L	5
Dissolved Lead	8.5		ug/L	1	13		ug/L	1
Dissolved Arsenic	8		ug/L	5	6		ug/L	5
Dissolved Selenium	9		ug/L	5	7		ug/L	5
Total Mercury	0.2	U	ug/L	0.2	0.2	U	ug/L	0.2
Dissolved Silver	1	U	ug/L	1	1	U	ug/L	1
Dissolved Copper	10		ug/L	1	13		ug/L	1
Dissolved Beryllium	1	U	ug/L	1	1	U	ug/L	1
Dissolved Nickel	20		ug/L	2	25		ug/L	2
Dissolved Cadmium	1	U	ug/L	1	1	U	ug/L	1
Dissolved Chromium	6		ug/L	1	7		ug/L	1
Dissolved Zinc	36		ug/L	1	42		ug/L	1
TPH OIL & GREASE	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
VOLATILE ORGANICS (BY GC/MS)								
Chloromethane	1	U	ug/L	1	1	U	ug/L	1
Bromomethane	1	U	ug/L	1	1	U	ug/L	1
Vinyl Chloride	1	U	ug/L	1	1	U	ug/L	1
Chloroethane	3	U	ug/L	3	3	U	ug/L	3
Methylene Chloride	1	U	ug/L	1	1	U	ug/L	1
Acetone	5	U	ug/L	5	5	U	ug/L	5
Carbon Disulfide	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethene (total)	1	U	ug/L	1	1	U	ug/L	1
Chloroform	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1
2-Butanone	3	U	ug/L	3	3	U	ug/L	3
1,1,1-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1
Carbon Tetrachloride	1	U	ug/L	1	1	U	ug/L	1
Vinyl Acetate	1	U	ug/L	1	1	U	ug/L	1
Bromodichloromethane	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloropropane	1	U	ug/L	1	1	U	ug/L	1
cis-1,3-Dichloropropene	3	U	ug/L	3	3	U	ug/L	3
Trichloroethene	1	U	ug/L	1	1	U	ug/L	1
Dibromochloromethane	3	U	ug/L	3	3	U	ug/L	3
1,1,2-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1
Benzene	1	U	ug/L	1	1	U	ug/L	1
Trans-1,3-dichloropropene	3	U	ug/L	3	3	U	ug/L	3
Bromoform	1	U	ug/L	1	1	U	ug/L	1
4-Methyl-2-Pentanone	3	U	ug/L	3	3	U	ug/L	3
2-Hexanone	3	U	ug/L	3	3	U	ug/L	3
Tetrachloroethene	1	U	ug/L	1	1	U	ug/L	1
1,1,2,2-Tetrachloroethane	3	U	ug/L	3	3	U	ug/L	3
Toluene	1	U	ug/L	1	1	U	ug/L	1
Chlorobenzene	3	U	ug/L	3	3	U	ug/L	3
Ethylbenzene	1	U	ug/L	1	1	U	ug/L	1
Styrene	1	U	ug/L	1	1	U	ug/L	1
Total Xylenes	1	U	ug/L	1	1	U	ug/L	1

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	: MW3-4	Sample No.	: MW3-5
	Lab Sample No.	: 15928-24	Lab Sample No.	: 15928-25
	Matrix	: WATER	Matrix	: WATER
	Assoc Sample(s)	: EB-14, TB-8, FB-2	Assoc Sample(s)	: EB-13, TB-8, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)								
Phenol	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroethyl)ether	2	U	ug/L	2	2	U	ug/L	2
2-Chlorophenol	2	U	ug/L	2	2	U	ug/L	2
1,3-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2
1,4-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2
Benzyl alcohol	2	U	ug/L	2	2	U	ug/L	2
1,2-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2
2-Methylphenol	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroisopropyl)ether	2	U	ug/L	2	2	U	ug/L	2
4-Methylphenol	2	U	ug/L	2	2	U	ug/L	2
N-Nitroso-di-n-propylamine	2	U	ug/L	2	2	U	ug/L	2
Hexachloroethane	4	U	ug/L	4	4	U	ug/L	4
Nitrobenzene	2	U	ug/L	2	2	U	ug/L	2
Isophorone	2	U	ug/L	2	2	U	ug/L	2
2-Nitrophenol	4	U	ug/L	4	4	U	ug/L	4
2,4-Dimethylphenol	2	U	ug/L	2	2	U	ug/L	2
Benzoic Acid	50	U	ug/L	50	50	U	ug/L	50
Bis(2-chloroethoxy)methane	2	U	ug/L	2	2	U	ug/L	2
2,4-Dichorophenol	4	U	ug/L	4	4	U	ug/L	4
1,2,4-Trichlorobenzene	2	U	ug/L	2	2	U	ug/L	2
Napthalene	4	U	ug/L	4	4	U	ug/L	4
4-Chloroaniline	2	U	ug/L	2	2	U	ug/L	2
Hexachlorobutadiene	2	U	ug/L	2	2	U	ug/L	2
4-Chloro-3-methylphenol	4	U	ug/L	4	4	U	ug/L	4
2-Methylnapthalene	2	U	ug/L	2	2	U	ug/L	2
Hexachlorocyclopentadiene	4	U	ug/L	4	4	U	ug/L	4
2,4,6-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4
2,4,5-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4
2-Chloronapthalene	2	U	ug/L	2	2	U	ug/L	2
2-Nitroaniline	4	U	ug/L	4	4	U	ug/L	4
Dimethyl phthalate	2	U	ug/L	2	2	U	ug/L	2
Acenaphthylene	2	U	ug/L	2	2	U	ug/L	2
2,6-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4
3-Nitroaniline	10	U	ug/L	10	10	U	ug/L	10
Acenaphthene	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrophenol	20	U	ug/L	20	20	U	ug/L	20
4-Nitrophenol	20	U	ug/L	20	20	U	ug/L	20
Dibenzofuran	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4
Diethyl phthalate	2	U	ug/L	2	2	U	ug/L	2
4-Chlorophenyl phenylether	2	U	ug/L	2	2	U	ug/L	2
Fluorene	2	U	ug/L	2	2	U	ug/L	2
4-Nitroaniline	4	U	ug/L	4	4	U	ug/L	4
4,6-Dinitro-2-Methylphenol	20	U	ug/L	20	20	U	ug/L	20
N-Nitrosodiphenylamine(1)	2	U	ug/L	2	2	U	ug/L	2
4-Bromophenyl phenylether	4	U	ug/L	4	4	U	ug/L	4
Hexachlorobenzene	4	U	ug/L	4	4	U	ug/L	4
Pentachlorophenol	20	U	ug/L	20	20	U	ug/L	20
Phenanthrene	2	U	ug/L	2	2	U	ug/L	2
Anthracene	2	U	ug/L	2	2	U	ug/L	2
Di-n-butylphthalate	2	U	ug/L	2	2	U	ug/L	2
Fluoranthene	2	U	ug/L	2	2	U	ug/L	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	: MW3-4	Sample No.	: MW3-5
	Lab Sample No.	: 15928-24	Lab Sample No.	: 15928-25
	Matrix	: WATER	Matrix	: WATER
	Assoc Sample(s)	: EB-14, TB-8, FB-2	Assoc Sample(s)	: EB-13, TB-8, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Pyrene	2	U	ug/L	2	2	U	ug/L	2
Butylbenzylphthalate	2	U	ug/L	2	2	U	ug/L	2
3,3'-Dichlorobenzidine	20	U	ug/L	20	20	U	ug/L	20
Benzo(a)anthracene	2	U	ug/L	2	2	U	ug/L	2
Chrysene	2	U	ug/L	2	2	U	ug/L	2
Bis(2-ethylhexyl)phthalate	3		ug/L	2	14		ug/L	2
Di-n-octyl phthalate	2	U	ug/L	2	2	U	ug/L	2
Benzo(b)fluoranthene	4	U	ug/L	4	4	U	ug/L	4
Benzo(k)fluoranthene	4	U	ug/L	4	4	U	ug/L	4
Benzo(a)pyrene	4	U	ug/L	4	4	U	ug/L	4
Indeno(1,2,3-cd)pyrene	4	U	ug/L	4	4	U	ug/L	4
Dibenzo(a,h)anthracene	4	U	ug/L	4	4	U	ug/L	4
Benzo(g,h,i)perylene	4	U	ug/L	4	4	U	ug/L	4

(1) Cannot be separated from diphenylamine

OTHER INORGANICS

Dissolved Iron	NT	U	ug/L	5	NT	U	ug/L	5
Dissolved Manganese	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Sodium	NT	U	mg/L	5	NT	U	mg/L	5
Dissolved Calcium	NT	U	mg/L	5	NT	U	mg/L	5
Dissolved Magnesium	NT	U	mg/L	5	NT	U	mg/L	5
Sulfate	NT	U	mg/L	1	NT	U	mg/L	1
Chloride	NT	U	mg/L	1	NT	U	mg/L	1
Nitrate	NT	U	mg/L	0.2	NT	U	mg/L	0.2
Total Dissolved Solids	NT	U	mg/L	1	NT	U	mg/L	1
Total Suspended Solids	NT	U	mg/L	1	NT	U	mg/L	1
Total Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2
Bicarbonate Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2
Carbonate Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2
pH	NT		Units	NA	NT		Units	NA

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

Sample No.	: MW3-4				Sample No.	: MW3-5			
Lab Sample No.	: 15928-24RE				Lab Sample No.	: 15928-25RE			
Matrix	: WATER				Matrix	: WATER			
Assoc Sample(s)	: EB-14 TB-8 FB-2				Assoc Sample(s)	: EB-13 TB-8 FB-2			
	Test Result	Flag	Unit	LLD		Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)									
Phenol	2	U	ug/L	2		2	U	ug/L	2
Bis(2-chloroethyl)ether	2	U	ug/L	2		2	U	ug/L	2
2-Chlorophenol	2	U	ug/L	2		2	U	ug/L	2
1,3-Dichlorobenzene	2	U	ug/L	2		2	U	ug/L	2
1,4-Dichlorobenzene	2	U	ug/L	2		2	U	ug/L	2
Benzyl alcohol	2	U	ug/L	2		2	U	ug/L	2
1,2-Dichlorobenzene	2	U	ug/L	2		2	U	ug/L	2
2-Methylphenol	2	U	ug/L	2		2	U	ug/L	2
Bis(2-chloroisopropyl)ether	2	U	ug/L	2		2	U	ug/L	2
4-Methylphenol	2	U	ug/L	2		2	U	ug/L	2
N-Nitroso-di-n-propylamine	2	U	ug/L	2		2	U	ug/L	2
Hexachloroethane	4	U	ug/L	4		4	U	ug/L	4
Nitrobenzene	2	U	ug/L	2		2	U	ug/L	2
Isophorone	2	U	ug/L	2		2	U	ug/L	2
2-Nitrophenol	4	U	ug/L	4		4	U	ug/L	4
2,4-Dimethylphenol	2	U	ug/L	2		2	U	ug/L	2
Benzoic Acid	53	U	ug/L	53		53	U	ug/L	53
Bis(2-chloroethoxy)methane	2	U	ug/L	2		2	U	ug/L	2
2,4-Dichorophenol	4	U	ug/L	4		4	U	ug/L	4
1,2,4-Trichlorobenzene	2	U	ug/L	2		2	U	ug/L	2
Napthalene	4	U	ug/L	4		4	U	ug/L	4
4-Chloroaniline	2	U	ug/L	2		2	U	ug/L	2
Hexachlorobutadiene	2	U	ug/L	2		2	U	ug/L	2
4-Chloro-3-methylphenol	4	U	ug/L	4		4	U	ug/L	4
2-Methylnapthalene	2	U	ug/L	2		2	U	ug/L	2
Hexachlorocyclopentadiene	4	U	ug/L	4		4	U	ug/L	4
2,4,6-Trichlorophenol	4	U	ug/L	4		4	U	ug/L	4
2,4,5-Trichlorophenol	4	U	ug/L	4		4	U	ug/L	4
2-Chloronapthalene	2	U	ug/L	2		2	U	ug/L	2
2-Nitroaniline	4	U	ug/L	4		4	U	ug/L	4
Dimethyl phthalate	2	U	ug/L	2		2	U	ug/L	2
Acenaphthylene	2	U	ug/L	2		2	U	ug/L	2
2,6-Dinitrotoluene	4	U	ug/L	4		4	U	ug/L	4
3-Nitroaniline	11	U	ug/L	11		11	U	ug/L	11
Acenaphthene	2	U	ug/L	2		2	U	ug/L	2
2,4-Dinitrophenol	21	U	ug/L	21		21	U	ug/L	21
4-Nitrophenol	21	U	ug/L	21		21	U	ug/L	21
Dibenzofuran	2	U	ug/L	2		2	U	ug/L	2
2,4-Dinitrotoluene	4	U	ug/L	4		4	U	ug/L	4
Diethyl phthalate	2	U	ug/L	2		2	U	ug/L	2
4-Chlorophenyl phenylether	2	U	ug/L	2		2	U	ug/L	2
Fluorene	2	U	ug/L	2		2	U	ug/L	2
4-Nitroaniline	4	U	ug/L	4		4	U	ug/L	4
4,6-Dinitro-2-Methylphenol	21	U	ug/L	21		21	U	ug/L	21
N-Nitrosodiphenylamine(1)	2	U	ug/L	2		2	U	ug/L	2
4-Bromophenyl phenylether	4	U	ug/L	4		4	U	ug/L	4
Hexachlorobenzene	4	U	ug/L	4		4	U	ug/L	4
Pentachlorophenol	21	U	ug/L	21		21	U	ug/L	21
Phenanthrene	2	U	ug/L	2		2	U	ug/L	2
Anthracene	2	U	ug/L	2		2	U	ug/L	2
Di-n-butylphthalate	2	U	ug/L	2		2	U	ug/L	2
Fluoranthene	2	U	ug/L	2		2	U	ug/L	2
Pyrene	2	U	ug/L	2		2	U	ug/L	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	MW3-4	Sample No.	MW3-5
	Lab Sample No.	15928-24RE	Lab Sample No.	15928-25RE
	Matrix	WATER	Matrix	WATER
	Assoc Sample(s)	EB-14, TB-8, FB-2	Assoc Sample(s)	EB-13, TB-8, FB-2

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Butylbenzylphthalate	2	U	ug/L	2	2	U	ug/L	2
3,3'-Dichlorobenzidine	21	U	ug/L	21	21	U	ug/L	21
Benzo(a)anthracene	2	U	ug/L	2	2	U	ug/L	2
Chrysene	2	U	ug/L	2	2	U	ug/L	2
Bis(2-ethylhexyl)phthalate	14	B	ug/L	2	17	B	ug/L	2
Di-n-octyl phthalate	2	U	ug/L	2	2	U	ug/L	2
Benzo(b)flouranthene	4	U	ug/L	4	4	U	ug/L	4
Benzo(k)flouranthene	4	U	ug/L	4	4	U	ug/L	4
Benzo(a)pyrene	4	U	ug/L	4	4	U	ug/L	4
Indeno(1,2,3-cd)pyrene	4	U	ug/L	4	4	U	ug/L	4
Dibenzo(a,h)anthracene	4	U	ug/L	4	4	U	ug/L	4
Benzo(g,h,i)perylene	4	U	ug/L	4	4	U	ug/L	4

(1) Cannot be separated from diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	Lab Sample No.	Matrix	Assoc Sample(s)
	TB-1	15928-2	WATER	
	TB-2	15928-4	WATER	
	TB-3	15928-9	WATER	
	TB-4	15928-13	WATER	

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
INORGANICS																
Dissolved Antimony	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5
Dissolved Thallium	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5
Dissolved Lead	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Arsenic	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5
Dissolved Selenium	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5
Total Mercury	NT	U	ug/L	0.2	NT	U	ug/L	0.2	NT	U	ug/L	0.2	NT	U	ug/L	0.2
Dissolved Silver	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Copper	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Beryllium	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Nickel	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Dissolved Cadmium	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Chromium	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Zinc	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
TPH OIL & GREASE																
VOLATILE ORGANICS (BY GC/MS)																
Chloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromomethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Methylene Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Acetone	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Carbon Disulfide	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethene (total)	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2-Butanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,1-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Carbon Tetrachloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Acetate	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromodichloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloropropane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
cis-1,3-Dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Trichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Dibromochloromethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,2-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Benzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Trans-1,3-dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Bromoform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
4-Methyl-2-Pentanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
2-Hexanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Tetrachloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1,2,2-Tetrachloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Toluene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chlorobenzene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Ethylbenzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Styrene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Total Xylenes	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	TB-1	TB-2	TB-3	TB-4
Sample No.	TB-1	TB-2	TB-3	TB-4
Lab Sample No.	15928-2	15928-4	15928-9	15928-13
Matrix	WATER	WATER	WATER	WATER
Assoc Sample(s)				

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)																
Phenol	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Bis(2-chloroethyl)ether	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
2-Chlorophenol	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
1,3-Dichlorobenzene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
1,4-Dichlorobenzene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Benzyl alcohol	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
1,2-Dichlorobenzene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
2-Methylphenol	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Bis(2-chloroisopropyl)ether	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
4-Methylphenol	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
N-Nitroso-di-n-propylamine	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Hexachloroethane	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Nitrobenzene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Isophorone	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
2-Nitrophenol	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
2,4-Dimethylphenol	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Benzoic Acid	NT	U	ug/L	50	NT	U	ug/L	50	NT	U	ug/L	50	NT	U	ug/L	50
Bis(2-chloroethoxy)methane	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
2,4-Dichorophenol	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
1,2,4-Trichlorobenzene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Napthalene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
4-Chloroaniline	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Hexachlorobutadiene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
4-Chloro-3-methylphenol	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
2-Methylnapthalene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Hexachlorocyclopentadiene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
2,4,6-Trichlorophenol	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
2,4,5-Trichlorophenol	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
2-Chloronapthalene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
2-Nitroaniline	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Dimethylphthalate	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Acenaphthylene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
2,6-Dinitrotoluene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
3-Nitroaniline	NT	U	ug/L	10	NT	U	ug/L	10	NT	U	ug/L	10	NT	U	ug/L	10
Acenaphthene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
2,4-Dinitrophenol	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20
4-Nitrophenol	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20
Dibenzofuran	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
2,4-Dinitrotoluene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Diethyl phthalate	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
4-Chlorophenyl phenylether	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Fluorene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
4-Nitroaniline	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
4,6-Dinitro-2-Methylphenol	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20
N-Nitrosodiphenylamine(1)	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
4-Bromophenyl phenylether	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Hexachlorobenzene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Pentachlorophenol	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20
Phenanthrene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Anthracene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Di-n-butylphthalate	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Fluoranthene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	TB-1	Sample No.	TB-2	Sample No.	TB-3	Sample No.	TB-4
	Lab Sample No.	15928-2	Lab Sample No.	15928-4	Lab Sample No.	15928-9	Lab Sample No.	15928-13
	Matrix	WATER	Matrix	WATER	Matrix	WATER	Matrix	WATER
	Assoc Sample(s)		Assoc Sample(s)		Assoc Sample(s)		Assoc Sample(s)	

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Pyrene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Butylbenzylphthalate	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
3,3'-Dichlorobenzidine	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20
Benzo(a)anthracene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Chrysene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Bis(2-ethylhexyl)phthalate	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Di-n-octyl phthalate	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Benzo(b)flouranthene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Benzo(k)flouranthene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Benzo(a)pyrene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Indeno(1,2,3-cd)pyrene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Dibenzo(a,h)anthracene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Benzo(g,h,i)perylene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
(1) Cannot be separated from diphenylamine																
OTHER INORGANICS																
Dissolved Iron	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5
Dissolved Manganese	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Sodium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Dissolved Calcium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Dissolved Magnesium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Sulfate	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Chloride	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Nitrate	NT	U	mg/L	0.2	NT	U	mg/L	0.2	NT	U	mg/L	0.2	NT	U	mg/L	0.2
Total Dissolved Solids	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Total Suspended Solids	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Total Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
Bicarbonate Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
Carbonate Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
pH	NT		NA	NA	NT		NA	NA	NT		NA	NA	NT		NA	NA

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	TB-5	TB-6	TB-7	TB-8
Sample No.	TB-5	TB-6	TB-7	TB-8
Lab Sample No.	15928-16	15928-17	15928-30	15928-44
Matrix	WATER	WATER	WATER	WATER
Assoc Sample(s)				

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
INORGANICS																
Dissolved Antimony	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5
Dissolved Thallium	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5
Dissolved Lead	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Arsenic	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5
Dissolved Selenium	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5
Total Mercury	NT	U	ug/L	0.2	NT	U	ug/L	0.2	NT	U	ug/L	0.2	NT	U	ug/L	0.2
Dissolved Silver	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Copper	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Beryllium	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Nickel	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Dissolved Cadmium	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Chromium	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Zinc	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
TPH OIL & GREASE	NT	U	ug/L	0.5	NT	U	ug/L	0.5	NT	U	ug/L	0.5	NT	U	ug/L	0.5
VOLATILE ORGANICS (BY GC/MS)																
Chloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromomethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Methylene Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Acetone	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Carbon Disulfide	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethene (total)	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2-Butanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,1-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Carbon Tetrachloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Acetate	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromodichloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloropropane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
cis-1,3-Dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Trichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Dibromochloromethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,2-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Benzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Trans-1,3-dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Bromoform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
4-Methyl-2-Pentanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
2-Hexanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Tetrachloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1,2,2-Tetrachloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Toluene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chlorobenzene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Ethylbenzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Styrene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Total Xylenes	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	: TB-5	Sample No.	: TB-6	Sample No.	: TB-7	Sample No.	: TB-8
	Lab Sample No.	: 15928-16	Lab Sample No.	: 15928-17	Lab Sample No.	: 15928-30	Lab Sample No.	: 15928-44
	Matrix	: WATER	Matrix	: WATER	Matrix	: WATER	Matrix	: WATER
	Assoc Sample(s)	:	Assoc Sample(s)	:	Assoc Sample(s)	:	Assoc Sample(s)	:

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)																
Phenol	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Bis(2-chloroethyl)ether	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
2-Chlorophenol	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
1,3-Dichlorobenzene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
1,4-Dichlorobenzene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Benzyl alcohol	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
1,2-Dichlorobenzene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
2-Methylphenol	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Bis(2-chloroisopropyl)ether	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
4-Methylphenol	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
N-Nitroso-di-n-propylamine	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Hexachloroethane	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Nitrobenzene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Isophorone	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
2-Nitrophenol	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
2,4-Dimethylphenol	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Benzoic Acid	NT	U	ug/L	50	NT	U	ug/L	50	NT	U	ug/L	50	NT	U	ug/L	50
Bis(2-chloroethoxy)methane	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
2,4-Dichorophenol	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
1,2,4-Trichlorobenzene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Napthalene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
4-Chloroaniline	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Hexachlorobutadiene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
4-Chloro-3-methylphenol	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
2-Methylnapthalene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Hexachlorocyclopentadiene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
2,4,6-Trichlorophenol	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
2,4,5-Trichlorophenol	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
2-Chloronapthalene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
2-Nitroaniline	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Dimethylphthalate	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Acenaphthylene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
2,6-Dinitrotoluene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
3-Nitroaniline	NT	U	ug/L	10	NT	U	ug/L	10	NT	U	ug/L	10	NT	U	ug/L	10
Acenaphthene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
2,4-Dinitrophenol	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20
4-Nitrophenol	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20
Dibenzofuran	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
2,4-Dinitrotoluene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Diethyl phthalate	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
4-Chlorophenyl phenylether	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Fluorene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
4-Nitroaniline	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
4,6-Dinitro-2-Methylphenol	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20
N-Nitrosodiphenylamine(1)	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
4-Bromophenyl phenylether	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Hexachlorobenzene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Pentachlorophenol	N.	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20
Phenanthrene	Nf	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Anthracene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Di-n-butylphthalate	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Fluoranthene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	TB-5	TB-6	TB-7	TB-8
Sample No.	TB-5	TB-6	TB-7	TB-8
Lab Sample No.	15928-16	15928-17	15928-30	15928-44
Matrix	WATER	WATER	WATER	WATER
Assoc Sample(s)				

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Pyrene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Butylbenzylphthalate	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
3,3'-Dichlorobenzidine	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20	NT	U	ug/L	20
Benzo(a)anthracene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Chrysene	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Bis(2-ethylhexyl)phthalate	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Di-n-octyl phthalate	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2	NT	U	ug/L	2
Benzo(b)flouranthene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Benzo(k)flouranthene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Benzo(a)pyrene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Indeno(1,2,3-cd)pyrene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Dibenzo(a,h)anthracene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
Benzo(g,h,i)perylene	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4	NT	U	ug/L	4
(1) Cannot be separated from diphenylamine																
OTHER INORGANICS																
Dissolved Iron	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5
Dissolved Manganese	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Sodium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Dissolved Calcium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Dissolved Magnesium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Sulfate	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Chloride	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Nitrate	NT	U	mg/L	0.2	NT	U	mg/L	0.2	NT	U	mg/L	0.2	NT	U	mg/L	0.2
Total Dissolved Solids	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Total Suspended Solids	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Total Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
Bicarbonate Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
Carbonate Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
pH	NT		NA	NA	NT		NA	NA	NT		NA	NA	NT		NA	NA

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	: FB-1	Sample No.	: FB-2
	Lab Sample No.	: 15928-10	Lab Sample No.	: 15928-29
	Matrix	: WATER	Matrix	: WATER
	Assoc Sample(s)	:	Assoc Sample(s)	:

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
INORGANICS								
Dissolved Antimony	5	U	ug/L	5	5	U	ug/L	5
Dissolved Thallium	5	U	ug/L	5	5	U	ug/L	5
Dissolved Lead	1	U	ug/L	1	2.6		ug/L	1
Dissolved Arsenic	5	U	ug/L	5	5	U	ug/L	5
Dissolved Selenium	5	U	ug/L	5	5	U	ug/L	5
Total Mercury	0.2	U	ug/L	0.2	0.2	U	ug/L	0.2
Dissolved Silver	1	U	ug/L	1	1	U	ug/L	1
Dissolved Copper	2		ug/L	1	1	U	ug/L	1
Dissolved Beryllium	1	U	ug/L	1	1	U	ug/L	1
Dissolved Nickel	2	U	ug/L	2	2	U	ug/L	2
Dissolved Cadmium	1	U	ug/L	1	1	U	ug/L	1
Dissolved Chromium	1	U	ug/L	1	1	U	ug/L	1
Dissolved Zinc	8		ug/L	1	5		ug/L	1
TPH OIL & GREASE	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
VOLATILE ORGANICS (BY GC/MS)								
Chloromethane	1	U	ug/L	1	1	U	ug/L	1
Bromomethane	1	U	ug/L	1	1	U	ug/L	1
Vinyl Chloride	1	U	ug/L	1	1	U	ug/L	1
Chloroethane	3	U	ug/L	3	3	U	ug/L	3
Methylene Chloride	1	U	ug/L	1	2	B	ug/L	1
Acetone	5	U	ug/L	5	5	U	ug/L	5
Carbon Disulfide	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethene (total)	1	U	ug/L	1	1	U	ug/L	1
Chloroform	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1
2-Butanone	3	U	ug/L	3	3	U	ug/L	3
1,1,1-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1
Carbon Tetrachloride	1	U	ug/L	1	1	U	ug/L	1
Vinyl Acetate	1	U	ug/L	1	1	U	ug/L	1
Bromodichloromethane	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloropropane	1	U	ug/L	1	1	U	ug/L	1
cis-1,3-Dichloropropene	3	U	ug/L	3	3	U	ug/L	3
Trichloroethene	1	U	ug/L	1	1	U	ug/L	1
Dibromochloromethane	3	U	ug/L	3	3	U	ug/L	3
1,1,2-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1
Benzene	1	U	ug/L	1	1	U	ug/L	1
Trans-1,3-dichloropropene	3	U	ug/L	3	3	U	ug/L	3
Bromoform	1	U	ug/L	1	1	U	ug/L	1
4-Methyl-2-Pentanone	3	U	ug/L	3	3	U	ug/L	3
2-Hexanone	3	U	ug/L	3	3	U	ug/L	3
Tetrachloroethene	1	U	ug/L	1	1	U	ug/L	1
1,1,2,2-Tetrachloroethane	3	U	ug/L	3	3	U	ug/L	3
Toluene	1	U	ug/L	1	1	U	ug/L	1
Chlorobenzene	3	U	ug/L	3	3	U	ug/L	3
Ethylbenzene	1	U	ug/L	1	1	U	ug/L	1
Styrene	1	U	ug/L	1	1	U	ug/L	1
Total Xylenes	1	U	ug/L	1	1	U	ug/L	1

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	FB-1	FB-2
Sample No.	FB-1	FB-2
Lab Sample No.	15928-10	15928-29
Matrix	WATER	WATER
Assoc Sample(s)		

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)								
Phenol	2	U	ug/L	2	NT	U	ug/L	NT
Bis(2-chloroethyl)ether	2	U	ug/L	2	NT	U	ug/L	NT
2-Chlorophenol	2	U	ug/L	2	NT	U	ug/L	NT
1,3-Dichlorobenzene	2	U	ug/L	2	NT	U	ug/L	NT
1,4-Dichlorobenzene	2	U	ug/L	2	NT	U	ug/L	NT
Benzyl alcohol	2	U	ug/L	2	NT	U	ug/L	NT
1,2-Dichlorobenzene	2	U	ug/L	2	NT	U	ug/L	NT
2-Methylphenol	2	U	ug/L	2	NT	U	ug/L	NT
Bis(2-chloroisopropyl)ether	2	U	ug/L	2	NT	U	ug/L	NT
4-Methylphenol	2	U	ug/L	2	NT	U	ug/L	NT
N-Nitroso-di-n-propylamine	2	U	ug/L	2	NT	U	ug/L	NT
Hexachloroethane	4	U	ug/L	4	NT	U	ug/L	NT
Nitrobenzene	2	U	ug/L	2	NT	U	ug/L	NT
Isophorone	2	U	ug/L	2	NT	U	ug/L	NT
2-Nitrophenol	4	U	ug/L	4	NT	U	ug/L	NT
2,4-Dimethylphenol	2	U	ug/L	2	NT	U	ug/L	NT
Benzoic Acid	50	U	ug/L	50	NT	U	ug/L	NT
Bis(2-chloroethoxy)methane	2	U	ug/L	2	NT	U	ug/L	NT
2,4-Dichorophenol	4	U	ug/L	4	NT	U	ug/L	NT
1,2,4-Trichlorobenzene	2	U	ug/L	2	NT	U	ug/L	NT
Napthalene	4	U	ug/L	4	NT	U	ug/L	NT
4-Chloroaniline	2	U	ug/L	2	NT	U	ug/L	NT
Hexachlorobutadiene	2	U	ug/L	2	NT	U	ug/L	NT
4-Chloro-3-methylphenol	4	U	ug/L	4	NT	U	ug/L	NT
2-Methylnapthalene	2	U	ug/L	2	NT	U	ug/L	NT
Hexachlorocyclopentadiene	4	U	ug/L	4	NT	U	ug/L	NT
2,4,6-Trichlorophenol	4	U	ug/L	4	NT	U	ug/L	NT
2,4,5-Trichlorophenol	4	U	ug/L	4	NT	U	ug/L	NT
2-Chloronapthalene	2	U	ug/L	2	NT	U	ug/L	NT
2-Nitroaniline	4	U	ug/L	4	NT	U	ug/L	NT
Dimethylphthalate	2	U	ug/L	2	NT	U	ug/L	NT
Acenaphthylene	2	U	ug/L	2	NT	U	ug/L	NT
2,6-Dinitrotoluene	4	U	ug/L	4	NT	U	ug/L	NT
3-Nitroaniline	10	U	ug/L	10	NT	U	ug/L	NT
Acenaphthene	2	U	ug/L	2	NT	U	ug/L	NT
2,4-Dinitrophenol	20	U	ug/L	20	NT	U	ug/L	NT
4-Nitrophenol	20	U	ug/L	20	NT	U	ug/L	NT
Dibenzofuran	2	U	ug/L	2	NT	U	ug/L	NT
2,4-Dinitrotoluene	4	U	ug/L	4	NT	U	ug/L	NT
Diethyl phthalate	2	U	ug/L	2	NT	U	ug/L	NT
4-Chlorophenyl phenylether	2	U	ug/L	2	NT	U	ug/L	NT
Flourene	2	U	ug/L	2	NT	U	ug/L	NT
4-Nitroaniline	4	U	ug/L	4	NT	U	ug/L	NT
4,6-Dinitro-2-Methylphenol	20	U	ug/L	20	NT	U	ug/L	NT
N-Nitrosodiphenylamine(1)	2	U	ug/L	2	NT	U	ug/L	NT
4-Bromophenyl phenylether	4	U	ug/L	4	NT	U	ug/L	NT
Hexachlorobenzene	4	U	ug/L	4	NT	U	ug/L	NT
Pentachlorophenol	20	U	ug/L	20	NT	U	ug/L	NT
Phenanthrene	2	U	ug/L	2	NT	U	ug/L	NT
Anthracene	2	U	ug/L	2	NT	U	ug/L	NT
Di-n-butylphthalate	2	U	ug/L	2	NT	U	ug/L	NT
Flouranthene	2	U	ug/L	2	NT	U	ug/L	NT

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	FB-1	FB-2
Sample No.	FB-1	FB-2
Lab Sample No.	15928-10	15928-29
Matrix	WATER	WATER
Assoc Sample(s)		

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)								
Phenol	2	U	ug/L	2	NT	U	ug/L	NT
Bis(2-chloroethyl)ether	2	U	ug/L	2	NT	U	ug/L	NT
2-Chlorophenol	2	U	ug/L	2	NT	U	ug/L	NT
1,3-Dichlorobenzene	2	U	ug/L	2	NT	U	ug/L	NT
1,4-Dichlorobenzene	2	U	ug/L	2	NT	U	ug/L	NT
Benzyl alcohol	2	U	ug/L	2	NT	U	ug/L	NT
1,2-Dichlorobenzene	2	U	ug/L	2	NT	U	ug/L	NT
2-Methylphenol	2	U	ug/L	2	NT	U	ug/L	NT
Bis(2-chloroisopropyl)ether	2	U	ug/L	2	NT	U	ug/L	NT
4-Methylphenol	2	U	ug/L	2	NT	U	ug/L	NT
N-Nitroso-di-n-propylamine	2	U	ug/L	2	NT	U	ug/L	NT
Hexachloroethane	4	U	ug/L	4	NT	U	ug/L	NT
Nitrobenzene	2	U	ug/L	2	NT	U	ug/L	NT
Isophorone	2	U	ug/L	2	NT	U	ug/L	NT
2-Nitrophenol	4	U	ug/L	4	NT	U	ug/L	NT
2,4-Dimethylphenol	2	U	ug/L	2	NT	U	ug/L	NT
Benzoic Acid	50	U	ug/L	50	NT	U	ug/L	NT
Bis(2-chloroethoxy)methane	2	U	ug/L	2	NT	U	ug/L	NT
2,4-Dichorophenol	4	U	ug/L	4	NT	U	ug/L	NT
1,2,4-Trichlorobenzene	2	U	ug/L	2	NT	U	ug/L	NT
Napthalene	4	U	ug/L	4	NT	U	ug/L	NT
4-Chloroaniline	2	U	ug/L	2	NT	U	ug/L	NT
Hexachlorobutadiene	2	U	ug/L	2	NT	U	ug/L	NT
4-Chloro-3-methylphenol	4	U	ug/L	4	NT	U	ug/L	NT
2-Methylnapthalene	2	U	ug/L	2	NT	U	ug/L	NT
Hexachlorocyclopentadiene	4	U	ug/L	4	NT	U	ug/L	NT
2,4,6-Trichlorophenol	4	U	ug/L	4	NT	U	ug/L	NT
2,4,5-Trichlorophenol	4	U	ug/L	4	NT	U	ug/L	NT
2-Chloronapthalene	2	U	ug/L	2	NT	U	ug/L	NT
2-Nitroaniline	4	U	ug/L	4	NT	U	ug/L	NT
Dimethylphthalate	2	U	ug/L	2	NT	U	ug/L	NT
Acenaphthylene	2	U	ug/L	2	NT	U	ug/L	NT
2,6-Dinitrotoluene	4	U	ug/L	4	NT	U	ug/L	NT
3-Nitroaniline	10	U	ug/L	10	NT	U	ug/L	NT
Acenaphthene	2	U	ug/L	2	NT	U	ug/L	NT
2,4-Dinitrophenol	20	U	ug/L	20	NT	U	ug/L	NT
4-Nitrophenol	20	U	ug/L	20	NT	U	ug/L	NT
Dibenzofuran	2	U	ug/L	2	NT	U	ug/L	NT
2,4-Dinitrotoluene	4	U	ug/L	4	NT	U	ug/L	NT
Diethyl phthalate	2	U	ug/L	2	NT	U	ug/L	NT
4-Chlorophenyl phenylether	2	U	ug/L	2	NT	U	ug/L	NT
Fluorene	2	U	ug/L	2	NT	U	ug/L	NT
4-Nitroaniline	4	U	ug/L	4	NT	U	ug/L	NT
4,6-Dinitro-2-Methylphenol	20	U	ug/L	20	NT	U	ug/L	NT
N-Nitrosodiphenylamine(1)	2	U	ug/L	2	NT	U	ug/L	NT
4-Bromophenyl phenylether	4	U	ug/L	4	NT	U	ug/L	NT
Hexachlorobenzene	4	U	ug/L	4	NT	U	ug/L	NT
Pentachlorophenol	20	U	ug/L	20	NT	U	ug/L	NT
Phenanthrene	2	U	ug/L	2	NT	U	ug/L	NT
Anthracene	2	U	ug/L	2	NT	U	ug/L	NT
Di-n-butylphthalate	2	U	ug/L	2	NT	U	ug/L	NT
Fluoranthene	2	U	ug/L	2	NT	U	ug/L	NT

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	: FB-1	Sample No.	: FB-2
	Lab Sample No.	: 15928-10	Lab Sample No.	: 15928-29
	Matrix	: WATER	Matrix	: WATER
	Assoc Sample(s)	:	Assoc Sample(s)	:

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Pyrene	2	U	ug/L	2	NT	U	ug/L	NT
Butylbenzylphthalate	2	U	ug/L	2	NT	U	ug/L	NT
3,3'-Dichlorobenzidine	20	U	ug/L	20	NT	U	ug/L	NT
Benzo(a)anthracene	2	U	ug/L	2	NT	U	ug/L	NT
Chrysene	2	U	ug/L	2	NT	U	ug/L	NT
Bis(2-ethylhexyl)phthalate	2	B	ug/L	2	NT	U	ug/L	NT
Di-n-octyl phthalate	2	U	ug/L	2	NT	U	ug/L	NT
Benzo(b)flouranthene	4	U	ug/L	4	NT	U	ug/L	NT
Benzo(k)flouranthene	4	U	ug/L	4	NT	U	ug/L	NT
Benzo(a)pyrene	4	U	ug/L	4	NT	U	ug/L	NT
Indeno(1,2,3-cd)pyrene	4	U	ug/L	4	NT	U	ug/L	NT
Dibenzo(a,h)anthracene	4	U	ug/L	4	NT	U	ug/L	NT
Benzo(g,h,i)perylene	4	U	ug/L	4	NT	U	ug/L	NT

(1) Cannot be separated from diphenylamine

OTHER INORGANICS								
Dissolved Iron	NT	U	ug/L	5	NT	U	ug/L	5
Dissolved Manganese	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Sodium	NT	U	mg/L	5	NT	U	mg/L	5
Dissolved Calcium	NT	U	mg/L	5	NT	U	mg/L	5
Dissolved Magnesium	NT	U	mg/L	5	NT	U	mg/L	5
Sulfate	NT	U	mg/L	1	NT	U	mg/L	1
Chloride	NT	U	mg/L	1	NT	U	mg/L	1
Nitrate	NT	U	mg/L	0.2	NT	U	mg/L	0.2
Total Dissolved Solids	NT	U	mg/L	1	NT	U	mg/L	1
Total Suspended Solids	NT	U	mg/L	1	NT	U	mg/L	1
Total Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2
Bicarbonate Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2
Carbonate Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2
pH	NT		NA	NA	NT		NA	NA

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	FB-1	FB-2
Sample No.	FB-1	FB-2
Lab Sample No.	15928-10RE	15928-29RE
Matrix	WATER	WATER
Assoc Sample(s)		

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)								
Phenol	NT	U	ug/L	NT	2	U	ug/L	2
Bis(2-chloroethyl)ether	NT	U	ug/L	NT	2	U	ug/L	2
2-Chlorophenol	NT	U	ug/L	NT	2	U	ug/L	2
1,3-Dichlorobenzene	NT	U	ug/L	NT	2	U	ug/L	2
1,4-Dichlorobenzene	NT	U	ug/L	NT	2	U	ug/L	2
Benzyl alcohol	NT	U	ug/L	NT	2	U	ug/L	2
1,2-Dichlorobenzene	NT	U	ug/L	NT	2	U	ug/L	2
2-Methylphenol	NT	U	ug/L	NT	2	U	ug/L	2
Bis(2-chloroisopropyl)ether	NT	U	ug/L	NT	2	U	ug/L	2
4-Methylphenol	NT	U	ug/L	NT	2	U	ug/L	2
N-Nitroso-di-n-propylamine	NT	U	ug/L	NT	2	U	ug/L	2
Hexachloroethane	NT	U	ug/L	NT	4	U	ug/L	4
Nitrobenzene	NT	U	ug/L	NT	2	U	ug/L	2
Isophorone	NT	U	ug/L	NT	2	U	ug/L	2
2-Nitrophenol	NT	U	ug/L	NT	4	U	ug/L	4
2,4-Dimethylphenol	NT	U	ug/L	NT	2	U	ug/L	2
Benzoic Acid	NT	U	ug/L	NT	52	U	ug/L	52
Bis(2-chloroethoxy)methane	NT	U	ug/L	NT	2	U	ug/L	2
2,4-Dichorophenol	NT	U	ug/L	NT	4	U	ug/L	4
1,2,4-Trichlorobenzene	NT	U	ug/L	NT	2	U	ug/L	2
Napthalene	NT	U	ug/L	NT	4	U	ug/L	4
4-Chloroaniline	NT	U	ug/L	NT	2	U	ug/L	2
Hexachlorobutadiene	NT	U	ug/L	NT	2	U	ug/L	2
4-Chloro-3-methylphenol	NT	U	ug/L	NT	4	U	ug/L	4
2-Methylnapthalene	NT	U	ug/L	NT	2	U	ug/L	2
Hexachlorocyclopentadiene	NT	U	ug/L	NT	4	U	ug/L	4
2,4,6-Trichlorophenol	NT	U	ug/L	NT	4	U	ug/L	4
2,4,5-Trichlorophenol	NT	U	ug/L	NT	4	U	ug/L	4
2-Chloronapthalene	NT	U	ug/L	NT	2	U	ug/L	2
2-Nitroaniline	NT	U	ug/L	NT	4	U	ug/L	4
Dimethylphthalate	NT	U	ug/L	NT	2	U	ug/L	2
Acenaphthylene	NT	U	ug/L	NT	2	U	ug/L	2
2,6-Dinitrotoluene	NT	U	ug/L	NT	4	U	ug/L	4
3-Nitroaniline	NT	U	ug/L	NT	10	U	ug/L	10
Acenaphthene	NT	U	ug/L	NT	2	U	ug/L	2
2,4-Dinitrophenol	NT	U	ug/L	NT	21	U	ug/L	21
4-Nitrophenol	NT	U	ug/L	NT	21	U	ug/L	21
Dibenzofuran	NT	U	ug/L	NT	2	U	ug/L	2
2,4-Dinitrotoluene	NT	U	ug/L	NT	4	U	ug/L	4
Diethyl phthalate	NT	U	ug/L	NT	2	U	ug/L	2
4-Chlorophenyl phenylether	NT	U	ug/L	NT	2	U	ug/L	2
Fluorene	NT	U	ug/L	NT	2	U	ug/L	2
4-Nitroaniline	NT	U	ug/L	NT	4	U	ug/L	4
4,6-Dinitro-2-Methylphenol	NT	U	ug/L	NT	21	U	ug/L	21
N-Nitrosodiphenylamine(1)	NT	U	ug/L	NT	2	U	ug/L	2
4-Bromophenyl phenylether	NT	U	ug/L	NT	4	U	ug/L	4
Hexachlorobenzene	NT	U	ug/L	NT	4	U	ug/L	4
Pentachlorophenol	NT	U	ug/L	NT	21	U	ug/L	21
Phenanthrene	NT	U	ug/L	NT	2	U	ug/L	2
Anthracene	NT	U	ug/L	NT	2	U	ug/L	2
Di-n-butylphthalate	NT	U	ug/L	NT	2	U	ug/L	2
Fluoranthene	NT	U	ug/L	NT	2	U	ug/L	2
Pyrene	NT	U	ug/L	NT	2	U	ug/L	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	: FB-1	Sample No.	: FB-2
	Lab Sample No.	: 15928-10RE	Lab Sample No.	: 15928-29RE
	Matrix	: WATER	Matrix	: WATER
	Assoc Sample(s)	:	Assoc Sample(s)	:

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Butylbenzylphthalate	NT	U	ug/L	NT	2	U	ug/L	2
3,3'-Dichlorobenzidine	NT	U	ug/L	NT	21	U	ug/L	21
Benzo(a)anthracene	NT	U	ug/L	NT	2	U	ug/L	2
Chrysene	NT	U	ug/L	NT	2	U	ug/L	2
Bis(2-ethylhexyl)phthalate	NT	U	ug/L	NT	1	JB	ug/L	2
Di-n-octyl phthalate	NT	U	ug/L	NT	2	U	ug/L	2
Benzo(b)flouranthene	NT	U	ug/L	NT	4	U	ug/L	4
Benzo(k)flouranthene	NT	U	ug/L	NT	4	U	ug/L	4
Benzo(a)pyrene	NT	U	ug/L	NT	4	U	ug/L	4
Indeno(1,2,3-cd)pyrene	NT	U	ug/L	NT	4	U	ug/L	4
Dibenzo(a,h)anthracene	NT	U	ug/L	NT	4	U	ug/L	4
Benzo(g,h,i)perylene	NT	U	ug/L	NT	4	U	ug/L	4

(1) Cannot be separated from diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	EB-1	EB-3	EB-4	EB-5
Sample No.	EB-1	EB-3	EB-4	EB-5
Lab Sample No.	15928-1	15928-3	15928-5	15928-6
Matrix	WATER	WATER	WATER	WATER
Assoc Sample(s)				

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
INORGANICS																
Dissolved Antimony	NT		ug/L	5	NT		ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Dissolved Thallium	NT		ug/L	5	NT		ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Dissolved Lead	2		ug/L	1	1		ug/L	1	1	U	ug/L	1	1.9		ug/L	1
Dissolved Arsenic	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Dissolved Selenium	NT		ug/L	5	NT		ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Total Mercury	NT		ug/L	0.2	NT		ug/L	0.2	0.2	U	ug/L	0.2	0.2	U	ug/L	0.2
Dissolved Silver	NT		ug/L	1	NT		ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Dissolved Copper	NT		ug/L	1	NT		ug/L	1	3		ug/L	1	4		ug/L	1
Dissolved Beryllium	NT		ug/L	1	NT		ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Dissolved Nickel	NT		ug/L	2	NT		ug/L	2	2	U	ug/L	2	4		ug/L	2
Dissolved Cadnium	NT		ug/L	1	NT		ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Dissolved Chromium	NT		ug/L	1	NT		ug/L	1	2		ug/L	1	4		ug/L	1
Dissolved Zinc	NT		ug/L	1	NT		ug/L	1	9		ug/L	1	12		ug/L	1
TPH OIL & GREASE	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
VOLATILE ORGANICS (BY GC/MS)																
Chloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromomethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Methylene Chloride	4		ug/L	1	4		ug/L	1	5		ug/L	1	4		ug/L	1
Acetone	5	U	ug/L	5	13		ug/L	5	18		ug/L	5	16		ug/L	5
Carbon Disulfide	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethene (total)	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2-Butanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,1-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Carbon Tetrachloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Acetate	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromodichloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloropropane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
cis-1,3-Dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Trichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Dibromochloromethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,2-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Benzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Trans-1,3-dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Bromoform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
4-Methyl-2-Pentanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
2-Hexanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Tetrachloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1,2,2-Tetrachloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Toluene	2		ug/L	1	2		ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chlorobenzene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Ethylbenzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Styrene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Total Xylenes	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	Lab Sample No.	Matrix	Assoc Sample(s)
	EB-1	15928-1	WATER	
	EB-3	15928-3	WATER	
	EB-4	15928-5	WATER	
	EB-5	15928-6	WATER	

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)																
Phenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroethyl)ether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Chlorophenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
1,3-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
1,4-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Benzyl alcohol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
1,2-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Methylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroisopropyl)ether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Methylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
N-Nitroso-di-n-propylamine	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Hexachloroethane	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Nitrobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Isophorone	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Nitrophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2,4-Dimethylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Benzoic Acid	52	U	ug/L	52	50	U	ug/L	50	50	U	ug/L	50	50	U	ug/L	50
Bis(2-chloroethoxy)methane	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,4-Dichorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
1,2,4-Trichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Napthalene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
4-Chloroaniline	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Hexachlorobutadiene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Chloro-3-methylphenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2-Methylnapthalene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Hexachlorocyclopentadiene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2,4,6-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2,4,5-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2-Chloronapthalene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Nitroaniline	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Dimethylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Acenaphthylene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,6-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
3-Nitroaniline	10	U	ug/L	10	10	U	ug/L	10	10	U	ug/L	10	10	U	ug/L	10
Acenaphthene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrophenol	21	U	ug/L	21	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20
4-Nitrophenol	21	U	ug/L	21	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20
Dibenzofuran	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Diethyl phthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Chlorophenyl phenylether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Fluorene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Nitroaniline	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
4,6-Dinitro-2-Methylphenol	21	U	ug/L	21	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20
N-Nitrosodiphenylamine(1)	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Bromophenyl phenylether	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Hexachlorobenzene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Pentachlorophenol	21	U	ug/L	21	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20
Phenanthrene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Anthracene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Di-n-butylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Fluoranthene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2

SAIC IRP Project - Joe Foss Field	Sample No.	: EB-1			Sample No.	: EB-3			Sample No.	: EB-4			Sample No.	: EB-5		
SAIC Project No. 01-827-03-769-22	Lab Sample No.	: 15928-1			Lab Sample No.	: 15928-3			Lab Sample No.	: 15928-5			Lab Sample No.	: 15928-6		
Lab Analysis by Laucks Testing Labs	Matrix	: WATER			Matrix	: WATER			Matrix	: WATER			Matrix	: WATER		
RI Data April-May 1989	Assoc Sample(s)	:			Assoc Sample(s)	:			Assoc Sample(s)	:			Assoc Sample(s)	:		
	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Pyrene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Butylbenzylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
3,3'-Dichlorobenzidine	21	U	ug/L	21	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20
Benzo(a)anthracene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Chrysene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Bis(2-ethylhexyl)phthalate	1	JB	ug/L	2	1	JB	ug/L	2	1	JB	ug/L	2	1	JB	ug/L	2
Di-n-octyl phthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Benzo(b)flouranthene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Benzo(k)flouranthene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Benzo(a)pyrene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Indeno(1,2,3-cd)pyrene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Dibenzo(a,h)anthracene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Benzo(g,h,i)perylene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
(1) Cannot be separated from diphenylamine																
OTHER INORGANICS																
Dissolved Iron	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5
Dissolved Manganese	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Sodium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Dissolved Calcium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Dissolved Magnesium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Sulfate	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Chloride	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Nitrate	NT	U	mg/L	0.2	NT	U	mg/L	0.2	NT	U	mg/L	0.2	NT	U	mg/L	0.2
Total Dissolved Solids	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Total Suspended Solids	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Total Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
Bicarbonate Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
Carbonate Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
pH	NT		NA	NA	NT		NA	NA	NT		NA	NA	NT		NA	NA

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	EB-6	Sample No.	EB-7	Sample No.	EB-8	Sample No.	EB-9
	Lab Sample No.	15928-7	Lab Sample No.	15928-8	Lab Sample No.	15928-11	Lab Sample No.	15928-12
	Matrix	WATER	Matrix	WATER	Matrix	WATER	Matrix	WATER
	Assoc Sample(s)		Assoc Sample(s)		Assoc Sample(s)		Assoc Sample(s)	

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
INORGANICS																
Dissolved Antimony	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5
Dissolved Thallium	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5
Dissolved Lead	1.7		ug/L	1	1	U	ug/L	1	1.5		ug/L	1	1.1		ug/L	1
Dissolved Arsenic	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Dissolved Selenium	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5	NT		ug/L	5
Total Mercury	NT		ug/L	0.2	NT		ug/L	0.2	NT		ug/L	0.2	NT		ug/L	0.2
Dissolved Silver	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Copper	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Beryllium	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Nickel	NT		ug/L	2	NT		ug/L	2	NT		ug/L	2	NT		ug/L	2
Dissolved Cadmium	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Chromium	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
Dissolved Zinc	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1	NT		ug/L	1
TPH OIL & GREASE	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
VOLATILE ORGANICS (BY GC/MS)																
Chloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromomethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Methylene Chloride	4		ug/L	1	4		ug/L	1	3		ug/L	1	1	U	ug/L	1
Acetone	10		ug/L	5	5	U	ug/L	5	15		ug/L	5	20		ug/L	5
Carbon Disulfide	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethene (total)	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2-Butanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,1-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Carbon Tetrachloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Acetate	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromodichloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloropropane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
cis-1,3-Dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Trichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Dibromochloromethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,2-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Benzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Trans-1,3-dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Bromoform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
4-Methyl-2-Pentanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
2-Hexanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Tetrachloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1,2,2-Tetrachloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Toluene	3		ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chlorobenzene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Ethylbenzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Styrene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Total Xylenes	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	EB-6	EB-7	EB-8	EB-9
Sample No.	EB-6	EB-7	EB-8	EB-9
Lab Sample No.	15928-7	15928-8	15928-11	15928-12
Matrix	WATER	WATER	WATER	WATER
Assoc Sample(s)				

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)																
Phenol	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroethyl)ether	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
2-Chlorophenol	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
1,3-Dichlorobenzene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
1,4-Dichlorobenzene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Benzyl alcohol	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
1,2-Dichlorobenzene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
2-Methylphenol	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroisopropyl)ether	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
4-Methylphenol	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
N-Nitroso-di-n-propylamine	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Hexachloroethane	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Nitrobenzene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Isophorone	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
2-Nitrophenol	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
2,4-Dimethylphenol	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Benzoic Acid	50	U	ug/L	50	67	U	ug/L	67	50	U	ug/L	50	50	U	ug/L	50
Bis(2-chloroethoxy)methane	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
2,4-Dichorophenol	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
1,2,4-Trichlorobenzene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Napthalene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
4-Chloroaniline	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Hexachlorobutadiene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
4-Chloro-3-methylphenol	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
2-Methylnapthalene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Hexachlorocyclopentadiene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
2,4,6-Trichlorophenol	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
2,4,5-Trichlorophenol	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
2-Chloronapthalene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
2-Nitroaniline	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Dimethylphthalate	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Acenaphthylene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
2,6-Dinitrotoluene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
3-Nitroaniline	10	U	ug/L	10	13	U	ug/L	13	10	U	ug/L	10	10	U	ug/L	10
Acenaphthene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrophenol	20	U	ug/L	20	27	U	ug/L	27	20	U	ug/L	20	20	U	ug/L	20
4-Nitrophenol	20	U	ug/L	20	27	U	ug/L	27	20	U	ug/L	20	20	U	ug/L	20
Dibenzofuran	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrotoluene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Diethyl phthalate	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
4-Chlorophenyl phenylether	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Fluorene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
4-Nitroaniline	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
4,6-Dinitro-2-Methylphenol	20	U	ug/L	20	27	U	ug/L	27	20	U	ug/L	20	20	U	ug/L	20
N-Nitrosodiphenylamine(1)	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
4-Bromophenyl phenylether	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Hexachlorobenzene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Pentachlorophenol	20	U	ug/L	20	27	U	ug/L	27	20	U	ug/L	20	20	U	ug/L	20
Phenanthrene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Anthracene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Di-n-butylphthalate	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Fluoranthene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	EB-6	EB-7	EB-8	EB-9
Sample No.	EB-6	EB-7	EB-8	EB-9
Lab Sample No.	15928-7	15928-8	15928-11	15928-12
Matrix	WATER	WATER	WATER	WATER
Assoc Sample(s)				

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Pyrene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Butylbenzylphthalate	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
3,3'-Dichlorobenzidine	20	U	ug/L	20	27	U	ug/L	27	20	U	ug/L	20	20	U	ug/L	20
Benzo(a)anthracene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Chrysene	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Bis(2-ethylhexyl)phthalate	2	U	ug/L	2	1	JB	ug/L	3	1	JB	ug/L	2	4	B	ug/L	2
Di-n-octyl phthalate	2	U	ug/L	2	3	U	ug/L	3	2	U	ug/L	2	2	U	ug/L	2
Benzo(b)flouranthene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Benzo(k)flouranthene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Benzo(a)pyrene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Indeno(1,2,3-cd)pyrene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Dibenzo(a,h)anthracene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
Benzo(g,h,i)perylene	4	U	ug/L	4	5	U	ug/L	5	4	U	ug/L	4	4	U	ug/L	4
(1) Cannot be separated from diphenylamine																
OTHER INORGANICS																
Dissolved Iron	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5
Dissolved Manganese	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Sodium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Dissolved Calcium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Dissolved Magnesium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Sulfate	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Chloride	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Nitrate	NT	U	mg/L	0.2	NT	U	mg/L	0.2	NT	U	mg/L	0.2	NT	U	mg/L	0.2
Total Dissolved Solids	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Total Suspended Solids	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Total Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
Bicarbonate Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
Carbonate Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
pH	NT		NA	NA	NT		NA	NA	NT		NA	NA	NT		NA	NA

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	Sample No.	: EB-10	Sample No.	: EB-11	Sample No.	: EB-12	Sample No.	: EB-13
	Lab Sample No.	: 15928-14	Lab Sample No.	: 15928-15	Lab Sample No.	: 15928-26	Lab Sample No.	: 15928-27
	Matrix	: WATER	Matrix	: WATER	Matrix	: WATER	Matrix	: WATER
	Assoc Sample(s)	:	Assoc Sample(s)	:	Assoc Sample(s)	:	Assoc Sample(s)	:

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
INORGANICS																
Dissolved Antimony	NT		ug/L	5	5	U	ug/L	5	NT		ug/L	5	5	U	ug/L	5
Dissolved Thallium	NT		ug/L	5	5	U	ug/L	5	NT		ug/L	5	5	U	ug/L	5
Dissolved Lead	2.5		ug/L	1	1.2		ug/L	1	1	U	ug/L	1	1.4		ug/L	1
Dissolved Arsenic	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Dissolved Selenium	NT		ug/L	5	5	U	ug/L	5	NT		ug/L	5	5	U	ug/L	5
Total Mercury	NT		ug/L	0.2	0.2	U	ug/L	0.2	NT		ug/L	0.2	0.2	U	ug/L	0.2
Dissolved Silver	NT		ug/L	1	1	U	ug/L	1	NT		ug/L	1	1	U	ug/L	1
Dissolved Copper	NT		ug/L	1	1	U	ug/L	1	NT		ug/L	1	3		ug/L	1
Dissolved Beryllium	NT		ug/L	1	1	U	ug/L	1	NT		ug/L	1	1	U	ug/L	1
Dissolved Nickel	NT		ug/L	2	2	U	ug/L	2	NT		ug/L	2	2	U	ug/L	2
Dissolved Cadmium	NT		ug/L	1	1	U	ug/L	1	NT		ug/L	1	1	U	ug/L	1
Dissolved Chromium	NT		ug/L	1	1	U	ug/L	1	NT		ug/L	1	1	U	ug/L	1
Dissolved Zinc	NT		ug/L	1	6		ug/L	1	NT		ug/L	1	14		ug/L	1
TPH OIL & GREASE	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5	0.5	U	ug/L	0.5
VOLATILE ORGANICS (BY GC/MS)																
Chloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromomethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Methylene Chloride	2		ug/L	1	3		ug/L	1	2	B	ug/L	1	2	B	ug/L	1
Acetone	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Carbon Disulfide	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethene (total)	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2-Butanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,1-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Carbon Tetrachloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Acetate	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromodichloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloropropane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
cis-1,3-Dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Trichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Dibromochloromethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,2-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Benzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Trans-1,3-dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Bromoform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
4-Methyl-2-Pentanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
2-Hexanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Tetrachloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1,2,2-Tetrachloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Toluene	1	U	ug/L	1	2		ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chlorobenzene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Ethylbenzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Styrene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Total Xylenes	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data Apri'-May 1989

	EB-10	EB-11	EB-12	EB-13
Sample No.	: EB-10	: EB-11	: EB-12	: EB-13
Lab Sample No.	: 15928-14	: 15928-15	: 15928-26	: 15928-27
Matrix	: WATER	: WATER	: WATER	: WATER
Assoc Sample(s)	:	:	:	:

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)																
Phenol	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Bis(2-chloroethyl)ether	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
2-Chlorophenol	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
1,3-Dichlorobenzene	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
1,4-Dichlorobenzene	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Benzyl alcohol	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
1,2-Dichlorobenzene	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
2-Methylphenol	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Bis(2-chloroisopropyl)ether	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
4-Methylphenol	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
N-Nitroso-di-n-propylamine	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Hexachloroethane	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
Nitrobenzene	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Isophorone	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
2-Nitrophenol	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
2,4-Dimethylphenol	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Benzoic Acid	67	U	ug/L	67	51	U	ug/L	51	NT	U	ug/L	NT	NT	U	ug/L	NT
Bis(2-chloroethoxy)methane	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
2,4-Dichorophenol	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
1,2,4-Trichlorobenzene	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Napthalene	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
4-Chloroaniline	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Hexachlorobutadiene	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
4-Chloro-3-methylphenol	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
2-Methylnapthalene	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Hexachlorocyclopentadiene	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
2,4,6-Trichlorophenol	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
2,4,5-Trichlorophenol	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
2-Chloronapthalene	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
2-Nitroaniline	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
Dimethylphthalate	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Acenaphthylene	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
2,6-Dinitrotoluene	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
3-Nitroaniline	13	U	ug/L	13	10	U	ug/L	10	NT	U	ug/L	NT	NT	U	ug/L	NT
Acenaphthene	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
2,4-Dinitrophenol	27	U	ug/L	27	20	U	ug/L	20	NT	U	ug/L	NT	NT	U	ug/L	NT
4-Nitrophenol	27	U	ug/L	27	20	U	ug/L	20	NT	U	ug/L	NT	NT	U	ug/L	NT
Dibenzofuran	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
2,4-Dinitrotoluene	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
Diethyl phthalate	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
4-Chlorophenyl phenylether	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Fluorene	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
4-Nitroaniline	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
4,6-Dinitro-2-Methylphenol	27	U	ug/L	27	20	U	ug/L	20	NT	U	ug/L	NT	NT	U	ug/L	NT
N-Nitrosodiphenylamine(1)	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
4-Bromophenyl phenylether	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
Hexachlorobenzene	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
Pentachlorophenol	27	U	ug/L	27	20	U	ug/L	20	NT	U	ug/L	NT	NT	U	ug/L	NT
Phenanthrene	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Anthracene	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Di-n-butylphthalate	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Fluoranthene	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

Sample No.	: EB-10	: EB-11	: EB-12	: EB-13
Lab Sample No.	: 15928-14	: 15928-15	: 15928-26	: 15928-27
Matrix	: WATER	: WATER	: WATER	: WATER
Assoc Sample(s)	:	:	:	:

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Pyrene	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Butylbenzylphthalate	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
3,3'-Dichlorobenzidine	27	U	ug/L	27	20	U	ug/L	20	NT	U	ug/L	NT	NT	U	ug/L	NT
Benzo(a)anthracene	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Chrysene	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Bis(2-ethylhexyl)phthalate	2	JB	ug/L	3	2	B	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Di-n-octyl phthalate	3	U	ug/L	3	2	U	ug/L	2	NT	U	ug/L	NT	NT	U	ug/L	NT
Benzo(b)flouranthene	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
Benzo(k)flouranthene	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
Benzo(a)pyrene	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
Indeno(1,2,3-cd)pyrene	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
Dibenzo(a,h)anthracene	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT
Benzo(g,h,i)perylene	5	U	ug/L	5	4	U	ug/L	4	NT	U	ug/L	NT	NT	U	ug/L	NT

(1) Cannot be separated from diphenylamine

OTHER INORGANICS

Dissolved Iron	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5	NT	U	ug/L	5
Dissolved Manganese	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1	NT	U	ug/L	1
Dissolved Sodium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Dissolved Calcium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Dissolved Magnesium	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5	NT	U	mg/L	5
Sulfate	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Chloride	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Nitrate	NT	U	mg/L	0.2	NT	U	mg/L	0.2	NT	U	mg/L	0.2	NT	U	mg/L	0.2
Total Dissolved Solids	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Total Suspended Solids	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1	NT	U	mg/L	1
Total Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
Bicarbonate Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
Carbonate Alkalinity	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2	NT	U	mg/L	2
pH	NT		NA	NA	NT		NA	NA	NT		NA	NA	NT		NA	NA

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

	EB-10	EB-11	EB-12	EB-13
Sample No.	EB-10	EB-11	EB-12	EB-13
Lab Sample No.	15928-14RE	15928-15RE	15928-26RE	15928-27RE
Matrix	WATER	WATER	WATER	WATER
Assoc Sample(s)				

SEMI-VOLATILES (BY GC/MS)	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Phenol	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroethyl)ether	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
2-Chlorophenol	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
1,3-Dichlorobenzene	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
1,4-Dichlorobenzene	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Benzyl alcohol	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
1,2-Dichlorobenzene	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
2-Methylphenol	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroisopropyl)ether	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
4-Methylphenol	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
N-Nitroso-di-n-propylamine	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Hexachloroethane	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Nitrobenzene	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Isophorone	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
2-Nitrophenol	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
2,4-Dimethylphenol	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Benzoic Acid	NT	U	ug/L	NT	NT	U	ug/L	NT	52	U	ug/L	52	52	U	ug/L	52
Bis(2-chloroethoxy)methane	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
2,4-Dichorophenol	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
1,2,4-Trichlorobenzene	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Napthalene	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
4-Chloroaniline	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Hexachlorobutadiene	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
4-Chloro-3-methylphenol	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
2-Methylnapthalene	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Hexachlorocyclopentadiene	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
2,4,6-Trichlorophenol	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
2,4,5-Trichlorophenol	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
2-Chloronapthalene	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
2-Nitroaniline	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Dimethylphthalate	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Acenaphthylene	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
2,6-Dinitrotoluene	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
3-Nitroaniline	NT	U	ug/L	NT	NT	U	ug/L	NT	10	U	ug/L	10	10	U	ug/L	10
Acenaphthene	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrophenol	NT	U	ug/L	NT	NT	U	ug/L	NT	21	U	ug/L	21	21	U	ug/L	21
4-Nitrophenol	NT	U	ug/L	NT	NT	U	ug/L	NT	21	U	ug/L	21	21	U	ug/L	21
Dibenzofuran	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrotoluene	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Diethyl phthalate	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
4-Chlorophenyl phenylether	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Fluorene	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
4-Nitroaniline	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
4,6-Dinitro-2-Methylphenol	NT	U	ug/L	NT	NT	U	ug/L	NT	21	U	ug/L	21	21	U	ug/L	21
N-Nitrosodiphenylamine(1)	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
4-Bromophenyl phenylether	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Hexachlorobenzene	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Pentachlorophenol	NT	U	ug/L	NT	NT	U	ug/L	NT	21	U	ug/L	21	21	U	ug/L	21
Phenanthrene	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Anthracene	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Di-n-butylphthalate	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Fluoranthene	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Pyrene	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2

SAIC IRP Project - Joe Foss Field	Sample No.	: EB-10	Sample No.	: EB-11	Sample No.	: EB-12	Sample No.	: EB-13
SAIC Project No. 01-827-03-769-22	Lab Sample No.	: 15928-14RE	Lab Sample No.	: 15928-15RE	Lab Sample No.	: 15928-26RE	Lab Sample No.	: 15928-27RE
Lab Analysis by Laucks Testing Labs	Matrix	: WATER	Matrix	: WATER	Matrix	: WATER	Matrix	: WATER
RI Data April-May 1989	Assoc Sample(s)	:	Assoc Sample(s)	:	Assoc Sample(s)	:	Assoc Sample(s)	:

	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD	Test Result	Flag	Unit	LLD
Butylbenzylphthalate	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
3,3'-Dichlorobenzidine	NT	U	ug/L	NT	NT	U	ug/L	NT	21	U	ug/L	21	21	U	ug/L	21
Benzo(a)anthracene	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Chrysene	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Bis(2-ethylhexyl)phthalate	NT	U	ug/L	NT	NT	U	ug/L	NT	38	B	ug/L	2	1	JB	ug/L	2
Di-n-octyl phthalate	NT	U	ug/L	NT	NT	U	ug/L	NT	2	U	ug/L	2	2	U	ug/L	2
Benzo(b)flouranthene	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Benzo(k)flouranthene	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Benzo(a)pyrene	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Indeno(1,2,3-cd)pyrene	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Dibenzo(a,h)anthracene	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4
Benzo(g,h,i)perylene	NT	U	ug/L	NT	NT	U	ug/L	NT	4	U	ug/L	4	4	U	ug/L	4

(1) Cannot be separated from diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

Sample No. : EB-14
Lab Sample No. : 15928-10
Matrix : WATER
Assoc Sample(s) :

	Test Result	Flag	Unit	LLD
INORGANICS				
Dissolved Antimony	5	U	ug/L	5
Dissolved Thallium	5	U	ug/L	5
Dissolved Lead	1.9		ug/L	1
Dissolved Arsenic	5	U	ug/L	5
Dissolved Selenium	5	U	ug/L	5
Total Mercury	0.2	U	ug/L	0.2
Dissolved Silver	1	U	ug/L	1
Dissolved Copper	1	U	ug/L	1
Dissolved Beryllium	1	U	ug/L	1
Dissolved Nickel	2	U	ug/L	2
Dissolved Cadmium	1	U	ug/L	1
Dissolved Chromium	1	U	ug/L	1
Dissolved Zinc	5		ug/L	1
TPH OIL & GREASE	0.5	U	ug/L	0.5
VOLATILE ORGANICS (BY GC/MS)				
Chloromethane	1	U	ug/L	1
Bromomethane	1	U	ug/L	1
Vinyl Chloride	1	U	ug/L	1
Chloroethane	3	U	ug/L	3
Methylene Chloride	2	B	ug/L	1
Acetone	5	U	ug/L	5
Carbon Disulfide	1	U	ug/L	1
1,1-Dichloroethene	1	U	ug/L	1
1,1-Dichloroethane	1	U	ug/L	1
1,2-Dichloroethene (total)	1	U	ug/L	1
Chloroform	1	U	ug/L	1
1,2-Dichloroethane	1	U	ug/L	1
2-Butanone	3	U	ug/L	3
1,1,1-Trichloroethane	1	U	ug/L	1
Carbon Tetrachloride	1	U	ug/L	1
Vinyl Acetate	1	U	ug/L	1
Bromodichloromethane	1	U	ug/L	1
1,2-Dichloropropane	1	U	ug/L	1
cis-1,3-Dichloropropene	3	U	ug/L	3
Trichloroethene	1	U	ug/L	1
Dibromochloromethane	3	U	ug/L	3
1,1,2-Trichloroethane	1	U	ug/L	1
Benzene	1	U	ug/L	1
Trans-1,3-dichloropropene	3	U	ug/L	3
Bromoform	1	U	ug/L	1
4-Methyl-2-Pentanone	3	U	ug/L	3
2-Hexanone	3	U	ug/L	3
Tetrachloroethene	1	U	ug/L	1
1,1,2,2-Tetrachloroethane	3	U	ug/L	3
Toluene	1	U	ug/L	1
Chlorobenzene	3	U	ug/L	3
Ethylbenzene	1	U	ug/L	1
Styrene	1	U	ug/L	1
Total Xylenes	1	U	ug/L	1

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

Sample No. : EB-14
Lab Sample No. : 15928-10
Matrix : WATER
Assoc Sample(s) :

	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)				
Phenol	NT	U	ug/L	NT
Bis(2-chloroethyl)ether	NT	U	ug/L	NT
2-Chlorophenol	NT	U	ug/L	NT
1,3-Dichlorobenzene	NT	U	ug/L	NT
1,4-Dichlorobenzene	NT	U	ug/L	NT
Benzyl alcohol	NT	U	ug/L	NT
1,2-Dichlorobenzene	NT	U	ug/L	NT
2-Methylphenol	NT	U	ug/L	NT
Bis(2-chloroisopropyl)ether	NT	U	ug/L	NT
4-Methylphenol	NT	U	ug/L	NT
N-Nitroso-di-n-propylamine	NT	U	ug/L	NT
Hexachloroethane	NT	U	ug/L	NT
Nitrobenzene	NT	U	ug/L	NT
Isophorone	NT	U	ug/L	NT
2-Nitrophenol	NT	U	ug/L	NT
2,4-Dimethylphenol	NT	U	ug/L	NT
Benzoic Acid	NT	U	ug/L	NT
Bis(2-chloroethoxy)methane	NT	U	ug/L	NT
2,4-Dichorophenol	NT	U	ug/L	NT
1,2,4-Trichlorobenzene	NT	U	ug/L	NT
Napthalei	NT	U	ug/L	NT
4-Chloroa ine	NT	U	ug/L	NT
Hexachlorobutadiene	NT	U	ug/L	NT
4-Chloro-3-methylphenol	NT	U	ug/L	NT
2-Methylnapthalene	NT	U	ug/L	NT
Hexachlorocyclopentadiene	NT	U	ug/L	NT
2,4,6-Trichlorophenol	NT	U	ug/L	NT
2,4,5-Trichlorophenol	NT	U	ug/L	NT
2-Chloronapthalene	NT	U	ug/L	NT
2-Nitroaniline	NT	U	ug/L	NT
Dimethylphthalate	NT	U	ug/L	NT
Acenaphthylene	NT	U	ug/L	NT
2,6-Dinitrotoluene	NT	U	ug/L	NT
3-Nitroaniline	NT	U	ug/L	NT
Acenaphthene	NT	U	ug/L	NT
2,4-Dinitrophenol	NT	U	ug/L	NT
4-Nitrophenol	NT	U	ug/L	NT
Dibenzofuran	NT	U	ug/L	NT
2,4-Dinitrotoluene	NT	U	ug/L	NT
Diethyl phthalate	NT	U	ug/L	NT
4-Chlorophenyl phenylether	NT	U	ug/L	NT
Fluorene	NT	U	ug/L	NT
4-Nitroaniline	NT	U	ug/L	NT
4,6-Dinitro-2-Methylphenol	NT	U	ug/L	NT
N-Nitrosodiphenylamine(1)	NT	U	ug/L	NT
4-Bromophenyl phenylether	NT	U	ug/L	NT
Hexachlorobenzene	NT	U	ug/L	NT
Pentachlorophenol	NT	U	ug/L	NT
Phenanthrene	NT	U	ug/L	NT
Anthracene	NT	U	ug/L	NT
Di-n-butylphthalate	NT	U	ug/L	NT
Fluoranthene	NT	U	ug/L	NT

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

Sample No. : EB-14
Lab Sample No. : 15928-10
Matrix : WATER
Assoc Sample(s) :

	Test Result	Flag	Unit	LLD
Pyrene	NT	U	ug/L	NT
Butylbenzylphthalate	NT	U	ug/L	NT
3,3'-Dichlorobenzidine	NT	U	ug/L	NT
Benzo(a)anthracene	NT	U	ug/L	NT
Chrysene	NT	U	ug/L	NT
Bis(2-ethylhexyl)phthalate	NT	U	ug/L	NT
Di-n-octyl phthalate	NT	U	ug/L	NT
Benzo(b)flouranthene	NT	U	ug/L	NT
Benzo(k)flouranthene	NT	U	ug/L	NT
Benzo(a)pyrene	NT	U	ug/L	NT
Indeno(1,2,3-cd)pyrene	NT	U	ug/L	NT
Dibenzo(a,h)anthracene	NT	U	ug/L	NT
Benzo(g,h,i)perylene	NT	U	ug/L	NT

(1) Cannot be separated from diphenylamine

OTHER INORGANICS				
Dissolved Iron	NT	U	ug/L	5
Dissolved Manganese	NT	U	ug/L	1
Dissolved Sodium	NT	U	mg/L	5
Dissolved Calcium	NT	U	mg/L	5
Dissolved Magnesium	NT	U	mg/L	5
Sulfate	NT	U	mg/L	1
Chloride	NT	U	mg/L	1
Nitrate	NT	U	mg/L	0.2
Total Dissolved Solids	NT	U	mg/L	1
Total Suspended Solids	NT	U	mg/L	1
Total Alkalinity	NT	U	mg/L	2
Bicarbonate Alkalinity	NT	U	mg/L	2
Carbonate Alkalinity	NT	U	mg/L	2
pH	NT		NA	NA

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

Sample No. : EB-14
Lab Sample No. : 15928-10RE
Matrix : WATER
Assoc Sample(s) :

	Test Result	Flag	Unit	LLD
SEMI-VOLATILES (BY GC/MS)				
Phenol	2	U	ug/L	2
Bis(2-chloroethyl)ether	2	U	ug/L	2
2-Chlorophenol	2	U	ug/L	2
1,3-Dichlorobenzene	2	U	ug/L	2
1,4-Dichlorobenzene	2	U	ug/L	2
Benzyl alcohol	2	U	ug/L	2
1,2-Dichlorobenzene	2	U	ug/L	2
2-Methylphenol	2	U	ug/L	2
Bis(2-chloroisopropyl)ether	2	U	ug/L	2
4-Methylphenol	2	U	ug/L	2
N-Nitroso-di-n-propylamine	2	U	ug/L	2
Hexachloroethane	4	U	ug/L	4
Nitrobenzene	2	U	ug/L	2
Isophorone	2	U	ug/L	2
2-Nitrophenol	4	U	ug/L	4
2,4-Dimethylphenol	2	U	ug/L	2
Benzoic Acid	52	U	ug/L	52
Bis(2-chloroethoxy)methane	2	U	ug/L	2
2,4-Dichorophenol	4	U	ug/L	4
1,2,4-Trichlorobenzene	2	U	ug/L	2
Naphthalene	4	U	ug/L	4
4-Chloroaniline	2	U	ug/L	2
Hexachlorobutadiene	2	U	ug/L	2
4-Chloro-3-methylphenol	4	U	ug/L	4
2-Methylnapthalene	2	U	ug/L	2
Hexachlorocyclopentadiene	4	U	ug/L	4
2,4,6-Trichlorophenol	4	U	ug/L	4
2,4,5-Trichlorophenol	4	U	ug/L	4
2-Chloronapthalene	2	U	ug/L	2
2-Nitroaniline	4	U	ug/L	4
Dimethylphthalate	2	U	ug/L	2
Acenaphthylene	2	U	ug/L	2
2,6-Dinitrotoluene	4	U	ug/L	4
3-Nitroaniline	10	U	ug/L	10
Acenaphthene	2	U	ug/L	2
2,4-Dinitrophenol	21	U	ug/L	21
4-Nitrophenol	21	U	ug/L	21
Dibenzofuran	2	U	ug/L	2
2,4-Dinitrotoluene	4	U	ug/L	4
Diethyl phthalate	2	U	ug/L	2
4-Chlorophenyl phenylether	2	U	ug/L	2
Fluorene	2	U	ug/L	2
4-Nitroaniline	4	U	ug/L	4
4,6-Dinitro-2-Methylphenol	21	U	ug/L	21
N-Nitrosodiphenylamine(1)	2	U	ug/L	2
4-Bromophenyl phenylether	4	U	ug/L	4
Hexachlorobenzene	4	U	ug/L	4
Pentachlorophenol	21	U	ug/L	21
Phenanthrene	2	U	ug/L	2
Anthracene	2	U	ug/L	2
Di-n-butylphthalate	2	U	ug/L	2
Fluoranthene	2	U	ug/L	2
Pyrene	2	U	ug/L	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data April-May 1989

Sample No. : EB-14
Lab Sample No. : 15928-10RE
Matrix : WATER
Assoc Sample(s) :

	Test Result	Flag	Unit	LLD
Butylbenzylphthalate	2	U	ug/L	2
3,3'-Dichlorobenzidine	21	U	ug/L	21
Benzo(a)anthracene	2	U	ug/L	2
Chrysene	2	U	ug/L	2
Bis(2-ethylhexyl)phthalate	1	JB	ug/L	2
Di-n-octyl phthalate	2	U	ug/L	2
Benzo(b)flouranthene	4	U	ug/L	4
Benzo(k)flouranthene	4	U	ug/L	4
Benzo(a)pyrene	4	U	ug/L	4
Indeno(1,2,3-cd)pyrene	4	U	ug/L	4
Dibenzo(a,h)anthracene	4	U	ug/L	4
Benzo(g,h,i)perylene	4	U	ug/L	4

(1) Cannot be separated from diphenylamine

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data July 1989

	Lab Sample Number: 17709-18 Project Sample Number: SW-1			Lab Sample Number: 17709-19 Project Sample Number: SW-2			Lab Sample Number: 17709-20 Project Sample Number: SW-3		
	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection
PETROLEUM HYDROCARBONS	0.5	U	mg/L	0.5	0.5	U	mg/L	0.5	0.5	U	mg/L	0.5
INORGANICS												
Arsenic	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Lead(by ICP)	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Lead(by Graphite Furnace)	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Magnesium	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Sodium	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Calcium	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Manganese	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Iron	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Total Suspended Solids	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Total Dissolved Solids	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Chloride	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Nitrate	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Sulfate	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Total Alkalinity	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Bicarbonate Alkakinity	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Carbonate Alkalinity	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
pH	NT		Units	NT	NT		Units	NT	NT		Units	NT
VOLATILE ORGANICS												
Chloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromomethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Methylene Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Acetone	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Carbon Disulfide	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
trans-1,2-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
cis-1,2-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
total-1,2-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2-Butanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,2-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1,1-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Carbon Tetrachloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Acetate	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromodichloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloropropane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Trichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Benzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Dibromochloromethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,2-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromoform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
4-Methyl-2-Pentanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
2-Hexanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,2,2-Tetrachloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Tetrachloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Toluene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chlorobenzene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
trans-1,3-Dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Ethylbenzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
cis-1,3-Dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Styrene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Total Xylenes	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data July 1989

	Lab Sample Number: 17709-18 Project Sample Number: SW-1			Lab Sample Number: 17709-19 Project Sample Number: SW-2			Lab Sample Number: 17709-20 Project Sample Number: SW-3		
	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection
SEMIVOLATILES												
Phenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Aniline	10	U	ug/L	10	10	U	ug/L	10	10	U	ug/L	10
Bis(2-chloroethyl)ether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Chlorophenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
1,3-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
1,4-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Benzyl Alcohol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
1,2-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Methylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroisopropyl)ether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Methylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
N-Nitroso-di-n-propylamine	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Hexachloroethane	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Nitrobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Isophorone	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Nitrophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2,4-Dimethylphenol	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Benzoic Acid	50	U	ug/L	50	50	U	ug/L	50	50	U	ug/L	50
Bis(2-chloroethoxy)methane	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,4-Dichlorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
1,2,4-Trichlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Naphthalene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
4-Chloroaniline	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Hexachlorobutadiene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Chloro-3-methylphenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2-Methylnaphthalene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Hexachlorocyclopentadiene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2,4,6-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2,4,5-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
2-Chloronaphthalene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2-Nitroanaline	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Dimethylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Acenaphthylene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,6-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
3-Nitroanaline	10	U	ug/L	10	10	U	ug/L	10	10	U	ug/L	10
Acenaphthene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrophenol	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20
4-Nitrophenol	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20
Dibenzofuran	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Diethylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Chlorophenyl phenylether	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Fluorene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
4-Nitroaniline	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
4,6-Dinitro-2-methylphenol	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20
N-Nitrosodiphenylamine	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
1,2-Diphenylhydrazine	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
4-Bromophenyl phenylether	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Hexachlorobenzene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Pentachlorophenol	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20
Phenanthrene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Anthracene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Di-n-butylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Fluoranthene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Pyrene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Benzidine	50	U	ug/L	50	50	U	ug/L	50	50	U	ug/L	50
Butylbenzylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
3,3'-Dichlorobenzidine	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data July 1989

	Lab Sample Number: 17709-18 Project Sample Number: SW-1			Lab Sample Number: 17709-19 Project Sample Number: SW-2			Lab Sample Number: 17709-20 Project Sample Number: SW-3		
	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection
Benzo(a)anthracene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Chrysene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Bis(2-ethylhexyl)phthalate	3		ug/L	2	11		ug/L	2	4		ug/L	2
Di-n-octylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Benzo(b)fluoranthene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Benzo(k)fluoranthene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Benzo(a)pyrene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Indeno(1,2,3-c,d)pyrene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Dibenzo(a,h)anthracene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Benzo(g,h,i)perylene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data July 1989

	Lab Sample Number: 17709-4 Project Sample Number: GW1-1 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-5 Project Sample Number: GW1-3 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-6 Project Sample Number: GW1-4 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-7 Project Sample Number: GW1-5 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3		
	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection
PETROLEUM HYDROCARBONS	0.5	U mg/L	0.5	0.8	mg/L	0.5	1.3	mg/L	0.5	2.2	mg/L	0.5
INORGANICS												
Arsenic	5	U ug/L	5	5	U ug/L	5	5	U ug/L	5	5	U ug/L	5
Lead(by ICP)	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Lead(by Graphite Furnace)	1	U ug/L	1	1	U ug/L	1	1.1	ug/L	1	0.8	J ug/L	1
Magnesium	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Sodium	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Calcium	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Manganese	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Iron	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Total Suspended Solids	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Total Dissolved Solids	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Chloride	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Nitrate	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Sulfate	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Total Alkalinity	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Bicarbonate Alkakinity	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Carbonate Alkalinity	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
pH	NT	Units	NT	NT	Units	NT	NT	Units	NT	NT	Units	NT
VOLATILE ORGANICS												
Chloromethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Bromomethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Vinyl Chloride	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Chloroethane	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
Methylene Chloride	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Acetone	5	U ug/L	5	5	U ug/L	5	6	ug/L	5	6	ug/L	5
Carbon Disulfide	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
1,1-Dichloroethene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
1,1-Dichloroethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
trans-1,2-Dichloroethene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
cis-1,2-Dichloroethene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
total-1,2-Dichloroethene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Chloroform	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
2-Butanone	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
1,2-Dichloroethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
1,1,1-Trichloroethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Carbon Tetrachloride	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Vinyl Acetate	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Bromodichloromethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
1,2-Dichloropropane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Trichloroethene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Benzene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Dibromochloromethane	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
1,1,2-Trichloroethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Bromoform	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
4-Methyl-2-Pentanone	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
2-Hexanone	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
1,1,2,2-Tetrachloroethane	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
Tetrachloroethene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Toluene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Chlorobenzene	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
trans-1,3-Dichloropropene	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data July 1989

	Lab Sample Number: 17709-4 Project Sample Number: GW1-1 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-5 Project Sample Number: GW1-3 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-6 Project Sample Number: GW1-4 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-7 Project Sample Number: GW1-4D Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3		
	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection
Ethylbenzene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
cis-1,3-Dichloropropene	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
Styrene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Total Xylenes	1	U ug/L	1	1	U ug/L	1	37	ug/L	1	2	ug/L	1
SEMIVOLATILES												
Phenol	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Aniline	10	U ug/L	10	10	U ug/L	10	10	U ug/L	10	10	U ug/L	10
Bis(2-chloroethyl)ether	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2-Chlorophenol	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
1,3-Dichlorobenzene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
1,4-Dichlorobenzene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Benzyl Alcohol	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
1,2-Dichlorobenzene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2-Methylphenol	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Bis(2-chloroisopropyl)ether	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
4-Methylphenol	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
N-Nitroso-di-n-propylamine	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Hexachloroethane	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
Nitrobenzene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Isophorone	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2-Nitrophenol	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
2,4-Dimethylphenol	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Benzoic Acid	50	U ug/L	50	50	U ug/L	50	50	U ug/L	50	50	U ug/L	50
Bis(2-chloroethoxy)methane	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2,4-Dichlorophenol	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
1,2,4-Trichlorobenzene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Naphthalene	4	U ug/L	4	11	ug/L	4	18	ug/L	4	18	ug/L	4
4-Chloroaniline	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Hexachlorobutadiene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
4-Chloro-3-methylphenol	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
2-Methylnaphthalene	2	U ug/L	2	2	U ug/L	2	5	ug/L	2	5	ug/L	2
Hexachlorocyclopentadiene	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
2,4,6-Trichlorophenol	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
2,4,5-Trichlorophenol	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
2-Chloronaphthalene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2-Nitroanaline	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
Dimethylphthalate	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Acenaphthylene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2,6-Dinitrotoluene	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
3-Nitroanaline	10	U ug/L	10	10	U ug/L	10	10	U ug/L	10	10	U ug/L	10
Acenaphthene	2	U ug/L	2	7	ug/L	2	2	ug/L	2	2	ug/L	2
2,4-Dinitrophenol	20	U ug/L	20	20	U ug/L	20	20	U ug/L	20	20	U ug/L	20
4-Nitrophenol	20	U ug/L	20	20	U ug/L	20	20	U ug/L	20	20	U ug/L	20
Dibenzofuran	2	U ug/L	2	3	ug/L	2	2	U ug/L	2	2	U ug/L	2
2,4-Dinitrotoluene	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
Diethylphthalate	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
4-Chlorophenyl phenylether	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Fluorene	2	U ug/L	2	6	ug/L	2	2	ug/L	2	2	ug/L	2
4-Nitroaniline	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
4,6-Dinitro-2-methylphenol	20	U ug/L	20	20	U ug/L	20	20	U ug/L	20	20	U ug/L	20
N-Nitrosodiphenylamine	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
1,2-Diphenylhydrazine	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
4-Bromophenyl phenylether	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
Hexachlorobenzene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Pentachlorophenol	20	U ug/L	20	20	U ug/L	20	20	U ug/L	20	20	U ug/L	20

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data July 1989

	Lab Sample Number: 17709-4 Project Sample Number: GW1-1 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3				Lab Sample Number: 17709-5 Project Sample Number: GW1-3 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3				Lab Sample Number: 17709-6 Project Sample Number: GW1-4 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3				Lab Sample Number: 17709-7 Project Sample Number: GW1-4D Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			
	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection
Phenanthrene	2	U	ug/L	2	9		ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Anthracene	2	U	ug/L	2	4		ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Di-n-butylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Fluoranthene	2	U	ug/L	2	10		ug/L	2	4		ug/L	2	3		ug/L	2
Pyrene	2	U	ug/L	2	9		ug/L	2	4		ug/L	2	3		ug/L	2
Benzidine	50	U	ug/L	50	50	U	ug/L	50	50	U	ug/L	50	50	U	ug/L	50
Butylbenzylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
3,3'-Dichlorobenzidine	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20
Benzo(a)anthracene	2	U	ug/L	2	2		ug/L	2	2		ug/L	2	2	U	ug/L	2
Chrysene	2	U	ug/L	2	2		ug/L	2	2		ug/L	2	2	U	ug/L	2
Bis(2-ethylhexyl)phthalate	3		ug/L	2	3		ug/L	2	17		ug/L	2	14		ug/L	2
Di-n-octylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Benzo(b)fluoranthene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Benzo(k)fluoranthene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Benzo(a)pyrene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Indeno(1,2,3-c,d)pyrene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Dibenzo(a,h)anthracene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Benzo(g,h,i)perylene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data July 1989

	Lab Sample Number: 17709-8 Project Sample Number: GW1-5 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-9 Project Sample Number: GW1-6 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-10 Project Sample Number: GW1-7 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-11 Project Sample Number: GW1-8 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3		
	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection
PETROLEUM HYDROCARBONS	0.5	U mg/L	0.5	0.5	U mg/L	0.5	0.5	U mg/L	0.5	0.5	U mg/L	0.5
INORGANICS												
Arsenic	5	U ug/L	5	5	U ug/L	5	5	U ug/L	5	5	U ug/L	5
Lead(by ICP)	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Lead(by Graphite Furnace)	0.8	J ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Magnesium	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Sodium	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Calcium	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Manganese	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Iron	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Total Suspended Solids	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Total Dissolved Solids	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Chloride	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Nitrate	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Sulfate	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Total Alkalinity	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Bicarbonate Alkakinity	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Carbonate Alkalinity	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
pH	NT	Units	NT	NT	Units	NT	NT	Units	NT	NT	Units	NT
VOLATILE ORGANICS												
Chloromethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Bromomethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Vinyl Chloride	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Chloroethane	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
Methylene Chloride	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Acetone	5	U ug/L	5	5	U ug/L	5	5	U ug/L	5	5	U ug/L	5
Carbon Disulfide	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
1,1-Dichloroethene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
1,1-Dichloroethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
trans-1,2-Dichloroethene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
cis-1,2-Dichloroethene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
total-1,2-Dichloroethene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Chloroform	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
2-Butanone	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
1,2-Dichloroethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
1,1,1-Trichloroethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Carbon Tetrachloride	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Vinyl Acetate	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Bromodichloromethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
1,2-Dichloropropane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Trichloroethene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Benzene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Dibromochloromethane	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
1,1,2-Trichloroethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Bromoform	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
4-Methyl-2-Pentanone	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
2-Hexanone	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
1,1,2,2-Tetrachloroethane	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
Tetrachloroethene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Toluene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Chlorobenzene	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
trans-1,3-Dichloropropene	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data July 1989

	Lab Sample Number: 17709-8 Project Sample Number: GW1-5 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-9 Project Sample Number: GW1-6 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-10 Project Sample Number: GW1-7 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-11 Project Sample Number: GW1-8 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3		
	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection
Ethylbenzene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
cis-1,3-Dichloropropene	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
Styrene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Total Xylenes	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
SEMIVOLATILES												
Phenol	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Aniline	10	U ug/L	10	10	U ug/L	10	10	U ug/L	10	10	U ug/L	10
Bis(2-chloroethyl)ether	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2-Chlorophenol	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
1,3-Dichlorobenzene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
1,4-Dichlorobenzene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Benzyl Alcohol	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
1,2-Dichlorobenzene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2-Methylphenol	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Bis(2-chloroisopropyl)ether	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
4-Methylphenol	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
N-Nitroso-di-n-propylamine	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Hexachloroethane	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
Nitrobenzene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Isophorone	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2-Nitrophenol	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
2,4-Dimethylphenol	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Benzoic Acid	50	U ug/L	50	50	U ug/L	50	52	U ug/L	52	51	U ug/L	51
Bis(2-chloroethoxy)methane	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2,4-Dichlorophenol	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
1,2,4-Trichlorobenzene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Naphthalene	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
4-Chloroaniline	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Hexachlorobutadiene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
4-Chloro-3-methylphenol	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
2-Methylnaphthalene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Hexachlorocyclopentadiene	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
2,4,6-Trichlorophenol	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
2,4,5-Trichlorophenol	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
2-Chloronaphthalene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2-Nitroanaline	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
Dimethylphthalate	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Acenaphthylene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2,6-Dinitrotoluene	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
3-Nitroanaline	10	U ug/L	10	10	U ug/L	10	10	U ug/L	10	10	U ug/L	10
Acenaphtnene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2,4-Dinitrophenol	20	U ug/L	20	20	U ug/L	20	21	U ug/L	21	20	U ug/L	20
4-Nitrophenol	20	U ug/L	20	20	U ug/L	20	21	U ug/L	21	20	U ug/L	20
Dibenzofuran	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2,4-Dinitrotoluene	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
Diethylphthalate	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
4-Chlorophenyl phenylether	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Fluorene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
4-Nitroaniline	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
4,6-Dinitro-2-methylphenol	20	U ug/L	20	20	U ug/L	20	21	U ug/L	21	20	U ug/L	20
N-Nitrosodiphenylamine	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
1,2-Diphenylhydrazine	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
4-Bromophenyl phenylether	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
Hexachlorobenzene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Pentachlorophenol	20	U ug/L	20	20	U ug/L	20	21	U ug/L	21	20	U ug/L	20

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data July 1989

	Lab Sample Number: 17709-8 Project Sample Number: GW1-5 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-9 Project Sample Number: GW1-6 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-10 Project Sample Number: GW1-7 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-11 Project Sample Number: GW1-8 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3		
	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection
Phenanthrene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Anthracene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Di-n-butylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Fluoranthene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Pyrene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Benzidine	50	U	ug/L	50	50	U	ug/L	50	52	U	ug/L	52	51	U	ug/L	51
Butylbenzylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
3,3'-Dichlorobenzidine	20	U	ug/L	20	20	U	ug/L	20	21	U	ug/L	21	20	U	ug/L	20
Benzo(a)anthracene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Chrysene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data July 1989

	Lab Sample Number: 17709-12 Project Sample Number: GW1-10 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-13 Project Sample Number: GW1-10D Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-14 Project Sample Number: GW1-11 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-15 Project Sample Number: GW1-12 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3		
	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection
PETROLEUM HYDROCARBONS	0.5	U	mg/L	0.5	0.5	U	mg/L	0.5	0.5	U	mg/L	0.5	1.2		mg/L	0.5
INORGANICS																
Arsenic	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5	20		ug/L	5
Lead(by ICP)	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Lead(by Graphite Furnace)	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	15		ug/L	1
Magnesium	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Sodium	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Calcium	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Manganese	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Iron	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Total Suspended Solids	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Total Dissolved Solids	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Chloride	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Nitrate	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Sulfate	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Total Alkalinity	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Bicarbonate Alkakinity	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
Carbonate Alkalinity	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT	NT	U	mg/L	NT
pH	NT		Units	NT	NT		Units	NT	NT		Units	NT	NT		Units	NT
VOLATILE ORGANICS																
Chloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromomethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Methylene Chloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Acetone	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5	5	U	ug/L	5
Carbon Disulfide	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
trans-1,2-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
cis-1,2-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
total-1,2-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chloroform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
2-Butanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,2-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,1,1-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Carbon Tetrachloride	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Vinyl Acetate	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromodichloromethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloropropane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Trichloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Benzene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Dibromochloromethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,2-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Bromoform	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
4-Methyl-2-Pentanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
2-Hexanone	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
1,1,2,2-Tetrachloroethane	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
Tetrachloroethene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Toluene	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1	1	U	ug/L	1
Chlorobenzene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3
trans-1,3-Dichloropropene	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3	3	U	ug/L	3

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data July 1989

	Lab Sample Number: 17709-12 Project Sample Number: GW1-10 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-13 Project Sample Number: GW1-10D Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-14 Project Sample Number: GW1-11 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-15 Project Sample Number: GW1-12 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3		
	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection
Ethylbenzene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	58	ug/L	1
cis-1,3-Dichloropropene	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
Styrene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Total Xylenes	1	U ug/L	1	1	U ug/L	1	1	ug/L	1	350	ug/L	10
SEMIVOLATILES												
Phenol	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Aniline	10	U ug/L	10	10	U ug/L	10	10	U ug/L	10	10	U ug/L	10
Bis(2-chloroethyl)ether	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2-Chlorophenol	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
1,3-Dichlorobenzene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
1,4-Dichlorobenzene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Benzyl Alcohol	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
1,2-Dichlorobenzene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2-Methylphenol	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Bis(2-chloroisopropyl)ether	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
4-Methylphenol	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
N-Nitroso-di-n-propylamine	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Hexachloroethane	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
Nitrobenzene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Isophorone	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2-Nitrophenol	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
2,4-Dimethylphenol	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Benzoic Acid	50	U ug/L	50	50	U ug/L	50	50	U ug/L	50	50	U ug/L	50
Bis(2-chloroethoxy)methane	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2,4-Dichlorophenol	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
1,2,4-Trichlorobenzene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Naphthalene	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	35	ug/L	4
4-Chloroaniline	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Hexachlorobutadiene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
4-Chloro-3-methylphenol	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
2-Methylnaphthalene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	21	ug/L	2
Hexachlorocyclopentadiene	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
2,4,6-Trichlorophenol	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
2,4,5-Trichlorophenol	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
2-Chloronaphthalene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2-Nitroanaline	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
Dimethylphthalate	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Acenaphthylene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2,6-Dinitrotoluene	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
3-Nitroanaline	10	U ug/L	10	10	U ug/L	10	10	U ug/L	10	10	U ug/L	10
Acenaphthene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2,4-Dinitrophenol	20	U ug/L	20	20	U ug/L	20	20	U ug/L	20	20	U ug/L	20
4-Nitrophenol	20	U ug/L	20	20	U ug/L	20	20	U ug/L	20	20	U ug/L	20
Dibenzofuran	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
2,4-Dinitrotoluene	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
Diethylphthalate	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
4-Chlorophenyl phenylether	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Fluorene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
4-Nitroaniline	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
4,6-Dinitro-2-methylphenol	20	U ug/L	20	20	U ug/L	20	20	U ug/L	20	20	U ug/L	20
N-Nitrosodiphenylamine	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
1,2-Diphenylhydrazine	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
4-Bromophenyl phenylether	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4	4	U ug/L	4
Hexachlorobenzene	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2	2	U ug/L	2
Pentachlorophenol	20	U ug/L	20	20	U ug/L	20	20	U ug/L	20	20	U ug/L	20

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data July 1989

	Lab Sample Number: 17709-12 Project Sample Number: GW1-10 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-13 Project Sampl. Number: GW1-10D Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-14 Project Sample Number: GW1-11 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			Lab Sample Number: 17709-15 Project Sample Number: GW1-12 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3		
	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection
Phenanthrene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Anthracene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Di-n-butylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Fluoranthene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Pyrene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Benzidine	50	U	ug/L	50	50	U	ug/L	50	50	U	ug/L	50	50	U	ug/L	50
Butylbenzylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
3,3'-Dichlorobenzidine	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20	20	U	ug/L	20
Benzo(a)anthracene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Chrysene	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Bis(2-ethylhexyl)phthalate	2	U	ug/L	2	3		ug/L	2	2	U	ug/L	2	4		ug/L	2
Di-n-octylphthalate	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2	2	U	ug/L	2
Benzo(b)fluoranthene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Benzo(k)fluoranthene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Benzo(a)pyrene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Indeno(1,2,3-c,d)pyrene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Dibenzo(a,h)anthracene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4
Benzo(g,h,i)perylene	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4	4	U	ug/L	4

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data July 1989

	Lab Sample Number: 17709-16 Project Sample Number: GW1-13 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3				Lab Sample Number: 17709-16 Project Sample Number: GW1-14 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			
	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection
PETROLEUM HYDROCARBONS	0.5	U	mg/L	0.5	0.5	U	mg/L	0.5
INORGANICS								
Arsenic	5	U	ug/L	5	5	U	ug/L	5
Lead(by ICP)	NT	U	mg/L	NT	NT	U	mg/L	NT
Lead(by Graphite Furnace)	1	U	ug/L	1	1	U	ug/L	1
Magnesium	NT	U	mg/L	NT	NT	U	mg/L	NT
Sodium	NT	U	mg/L	NT	NT	U	mg/L	NT
Calcium	NT	U	mg/L	NT	NT	U	mg/L	NT
Manganese	NT	U	mg/L	NT	NT	U	mg/L	NT
Iron	NT	U	mg/L	NT	NT	U	mg/L	NT
Total Suspended Solids	NT	U	mg/L	NT	NT	U	mg/L	NT
Total Dissolved Solids	NT	U	mg/L	NT	NT	U	mg/L	NT
Chloride	NT	U	mg/L	NT	NT	U	mg/L	NT
Nitrate	NT	U	mg/L	NT	NT	U	mg/L	NT
Sulfate	NT	U	mg/L	NT	NT	U	mg/L	NT
Total Alkalinity	NT	U	mg/L	NT	NT	U	mg/L	NT
Bicarbonate Alkakinity	NT	U	mg/L	NT	NT	U	mg/L	NT
Carbonate Alkalinity	NT	U	mg/L	NT	NT	U	mg/L	NT
pH	NT		Units	NT	NT		Units	NT
VOLATILE ORGANICS								
Chloromethane	1	U	ug/L	1	1	U	ug/L	1
Bromomethane	1	U	ug/L	1	1	U	ug/L	1
Vinyl Chloride	1	U	ug/L	1	1	U	ug/L	1
Chloroethane	3	U	ug/L	3	3	U	ug/L	3
Methylene Chloride	1	U	ug/L	1	1	U	ug/L	1
Acetone	5	U	ug/L	5	5	U	ug/L	5
Carbon Disulfide	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1
1,1-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1
trans-1,2-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1
cis-1,2-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1
total-1,2-Dichloroethene	1	U	ug/L	1	1	U	ug/L	1
Chloroform	1	U	ug/L	1	1	U	ug/L	1
2-Butanone	3	U	ug/L	3	3	U	ug/L	3
1,2-Dichloroethane	1	U	ug/L	1	1	U	ug/L	1
1,1,1-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1
Carbon Tetrachloride	1	U	ug/L	1	1	U	ug/L	1
Vinyl Acetate	1	U	ug/L	1	1	U	ug/L	1
Bromodichloromethane	1	U	ug/L	1	1	U	ug/L	1
1,2-Dichloropropane	1	U	ug/L	1	1	U	ug/L	1
Trichloroethene	1	U	ug/L	1	1	U	ug/L	1
Benzene	1	U	ug/L	1	1	U	ug/L	1
Dibromochloromethane	3	U	ug/L	3	3	U	ug/L	3
1,1,2-Trichloroethane	1	U	ug/L	1	1	U	ug/L	1
Bromoform	1	U	ug/L	1	1	U	ug/L	1
4-Methyl-2-Pentanone	3	U	ug/L	3	3	U	ug/L	3
2-Hexanone	3	U	ug/L	3	3	U	ug/L	3
1,1,2,2-Tetrachloroethane	3	U	ug/L	3	3	U	ug/L	3
Tetrachloroethene	1	U	ug/L	1	1	U	ug/L	1
Toluene	1	U	ug/L	1	1	U	ug/L	1
Chlorobenzene	3	U	ug/L	3	3	U	ug/L	3
trans-1,3-Dichloropropene	3	U	ug/L	3	3	U	ug/L	3

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data July 1989

	Lab Sample Number: 17709-16 Project Sample Number: GW1-13 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3				Lab Sample Number: 17709-16 Project Sample Number: GW1-14 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			
	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection
Ethylbenzene	1	U	ug/L	1	1	U	ug/L	1
cis-1,3-Dichloropropene	3	U	ug/L	3	3	U	ug/L	3
Styrene	1	U	ug/L	1	1	U	ug/L	1
Total Xylenes	1	U	ug/L	1	1	U	ug/L	1
SEMIVOLATILES								
Phenol	2	U	ug/L	2	2	U	ug/L	2
Aniline	10	U	ug/L	10	10	U	ug/L	10
Bis(2-chloroethyl)ether	2	U	ug/L	2	2	U	ug/L	2
2-Chlorophenol	2	U	ug/L	2	2	U	ug/L	2
1,3-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2
1,4-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2
Benzyl Alcohol	2	U	ug/L	2	2	U	ug/L	2
1,2-Dichlorobenzene	2	U	ug/L	2	2	U	ug/L	2
2-Methylphenol	2	U	ug/L	2	2	U	ug/L	2
Bis(2-chloroisopropyl)ether	2	U	ug/L	2	2	U	ug/L	2
4-Methylphenol	2	U	ug/L	2	2	U	ug/L	2
N-Nitroso-di-n-propylamine	2	U	ug/L	2	2	U	ug/L	2
Hexachloroethane	4	U	ug/L	4	4	U	ug/L	4
Nitrobenzene	2	U	ug/L	2	2	U	ug/L	2
Isophorone	2	U	ug/L	2	2	U	ug/L	2
2-Nitrophenol	4	U	ug/L	4	4	U	ug/L	4
2,4-Dimethylphenol	2	U	ug/L	2	2	U	ug/L	2
Benzoic Acid	50	U	ug/L	50	51	U	ug/L	51
Bis(2-chloroethoxy)methane	2	U	ug/L	2	2	U	ug/L	2
2,4-Dichlorophenol	4	U	ug/L	4	4	U	ug/L	4
1,2,4-Trichlorobenzene	2	U	ug/L	2	2	U	ug/L	2
Naphthalene	4	U	ug/L	4	4	U	ug/L	4
4-Chloroaniline	2	U	ug/L	2	2	U	ug/L	2
Hexachlorobutadiene	2	U	ug/L	2	2	U	ug/L	2
4-Chloro-3-methylphenol	4	U	ug/L	4	4	U	ug/L	4
2-Methylnaphthalene	2	U	ug/L	2	2	U	ug/L	2
Hexachlorocyclopentadiene	4	U	ug/L	4	4	U	ug/L	4
2,4,6-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4
2,4,5-Trichlorophenol	4	U	ug/L	4	4	U	ug/L	4
2-Chloronaphthalene	2	U	ug/L	2	2	U	ug/L	2
2-Nitroanaline	4	U	ug/L	4	4	U	ug/L	4
Dimethylphthalate	2	U	ug/L	2	2	U	ug/L	2
Acenaphthylene	2	U	ug/L	2	2	U	ug/L	2
2,6-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4
3-Nitroanaline	10	U	ug/L	10	10	U	ug/L	10
Acenaphthene	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrophenol	20	U	ug/L	20	20	U	ug/L	20
4-Nitrophenol	20	U	ug/L	20	20	U	ug/L	20
Dibenzofuran	2	U	ug/L	2	2	U	ug/L	2
2,4-Dinitrotoluene	4	U	ug/L	4	4	U	ug/L	4
Diethylphthalate	2	U	ug/L	2	2	U	ug/L	2
4-Chlorophenyl phenylether	2	U	ug/L	2	2	U	ug/L	2
Fluorene	2	U	ug/L	2	2	U	ug/L	2
4-Nitroaniline	4	U	ug/L	4	4	U	ug/L	4
4,6-Dinitro-2-methylphenol	20	U	ug/L	20	20	U	ug/L	20
N-Nitrosodiphenylamine	2	U	ug/L	2	2	U	ug/L	2
1,2-Diphenylhydrazine	4	U	ug/L	4	4	U	ug/L	4
4-Bromophenyl phenylether	4	U	ug/L	4	4	U	ug/L	4
Hexachlorobenzene	2	U	ug/L	2	2	U	ug/L	2
Pentachlorophenol	20	U	ug/L	20	20	U	ug/L	20

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data July 1989

	Lab Sample Number: 17709-16 Project Sample Number: GW1-13 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3				Lab Sample Number: 17709-16 Project Sample Number: GW1-14 Matrix: WATER Assoc Sample(s): EB-15, TB-9, FB-3			
	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection
Phenanthrene	2	U	ug/L	2	2	U	ug/L	2
Anthracene	2	U	ug/L	2	2	U	ug/L	2
Di-n-butylphthalate	2	U	ug/L	2	2	U	ug/L	2
Fluoranthene	2	U	ug/L	2	2	U	ug/L	2
Pyrene	2	U	ug/L	2	2	U	ug/L	2
Benzidine	50	U	ug/L	50	51	U	ug/L	51
Butylbenzylphthalate	2	U	ug/L	2	2	U	ug/L	2
3,3'-Dichlorobenzidine	20	U	ug/L	20	20	U	ug/L	20
Benzo(a)anthracene	2	U	ug/L	2	2	U	ug/L	2
Chrysene	2	U	ug/L	2	2	U	ug/L	2
Bis(2-ethylhexyl)phthalate	2		ug/L	2	43		ug/L	2
Di-n-octylphthalate	2	U	ug/L	2	2	U	ug/L	2
Benzo(b)fluoranthene	4	U	ug/L	4	4	U	ug/L	4
Benzo(k)fluoranthene	4	U	ug/L	4	4	U	ug/L	4
Benzo(a)pyrene	4	U	ug/L	4	4	U	ug/L	4
Indeno(1,2,3-c,d)pyrene	4	U	ug/L	4	4	U	ug/L	4
Dibenzo(a,h)anthracene	4	U	ug/L	4	4	U	ug/L	4
Benzo(g,h,i)perylene	4	U	ug/L	4	4	U	ug/L	4

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data July 1989

	Lab Sample Number: 17709-1 Project Sample Number: TB-9			Lab Sample Number: 17709-2 Project Sample Number: FB-3			Lab Sample Number: 17709-3 Project Sample Number: EB-15		
	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection	Test Results	Flag Units	Lowest Level of Detection
PETROLEUM HYDROCARBONS	NT	U mg/L	NT	0.5	U mg/L	0.5	0.5	U mg/L	0.5
INORGANICS									
Arsenic	NT	U ug/L	NT	5	U ug/L	5	5	U ug/L	5
Lead(by ICP)	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Lead(by Graphite Furnace)	NT	U ug/L	NT	1	U ug/L	1	1	U ug/L	1
Magnesium	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Sodium	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Calcium	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Manganese	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Iron	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Total Suspended Solids	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Total Dissolved Solids	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Chloride	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Nitrate	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Sulfate	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Total Alkalinity	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Bicarbonate Alkakinity	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
Carbonate Alkalinity	NT	U mg/L	NT	NT	U mg/L	NT	NT	U mg/L	NT
pH	NT	Units	NT	NT	Units	NT	NT	Units	NT
VOLATILE ORGANICS									
Chloromethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Bromomethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Vinyl Chloride	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Chloroethane	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
Methylene Chloride	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Acetone	8	ug/L	5	5	U ug/L	5	7	ug/L	5
Carbon Disulfide	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
1,1-Dichloroethene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
1,1-Dichloroethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
trans-1,2-Dichloroethene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
cis-1,2-Dichloroethene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
total-1,2-Dichloroethene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Chloroform	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
2-Butanone	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
1,2-Dichloroethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
1,1,1-Trichloroethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Carbon Tetrachloride	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Vinyl Acetate	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Bromodichloromethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
1,2-Dichloropropane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Trichloroethene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Benzene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Dibromochloromethane	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
1,1,2-Trichloroethane	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Bromoform	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
4-Methyl-2-Pentanone	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
2-Hexanone	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
1,1,2,2-Tetrachloroethane	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
Tetrachloroethene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Toluene	1	U ug/L	1	1	U ug/L	1	2	ug/L	1
Chlorobenzene	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
trans-1,3-Dichloropropene	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
Ethylbenzene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
cis-1,3-Dichloropropene	3	U ug/L	3	3	U ug/L	3	3	U ug/L	3
Styrene	1	U ug/L	1	1	U ug/L	1	1	U ug/L	1
Total Xylenes	1	U ug/L	1	1	U ug/L	1	1	ug/L	1

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data July 1989

	Lab Sample Number: 17709-1 Project Sample Number: TB-9			Lab Sample Number: 17709-2 Project Sample Number: FB-3			Lab Sample Number: 17709-3 Project Sample Number: EB-15		
	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection
SEMIVOLATILES												
Phenol	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Aniline	NT	U	ug/L	NT	13	U	ug/L	13	10	U	ug/L	10
Bis(2-chloroethyl)ether	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
2-Chlorophenol	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
1,3-Dichlorobenzene	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
1,4-Dichlorobenzene	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Benzyl Alcohol	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
1,2-Dichlorobenzene	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
2-Methylphenol	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Bis(2-chloroisopropyl)ether	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
4-Methylphenol	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
N-Nitroso-di-n-propylamine	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Hexachloroethane	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
Nitrobenzene	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Isophorone	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
2-Nitrophenol	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
2,4-Dimethylphenol	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Benzoic Acid	NT	U	ug/L	NT	67	U	ug/L	67	50	U	ug/L	50
Bis(2-chloroethoxy)methane	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
2,4-Dichlorophenol	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
1,2,4-Trichlorobenzene	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Naphthalene	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
4-Chloroaniline	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Hexachlorobutadiene	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
4-Chloro-3-methylphenol	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
2-Methylnaphthalene	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Hexachlorocyclopentadiene	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
2,4,6-Trichlorophenol	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
2,4,5-Trichlorophenol	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
2-Chloronaphthalene	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
2-Nitroanaline	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
Dimethylphthalate	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Acenaphthylene	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
2,6-Dinitrotoluene	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
3-Nitroanaline	NT	U	ug/L	NT	13	U	ug/L	13	10	U	ug/L	10
Acenaphthene	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
2,4-Dinitrophenol	NT	U	ug/L	NT	27	U	ug/L	27	20	U	ug/L	20
4-Nitrophenol	NT	U	ug/L	NT	27	U	ug/L	27	20	U	ug/L	20
Dibenzofuran	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
2,4-Dinitrotoluene	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
Diethylphthalate	NT	U	ug/L	NT	3	U	ug/L	3	3		ug/L	2
4 Chlorophenyl phenylether	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Fluorene	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
4-Nitroaniline	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
4,6-Dinitro-2-methylphenol	NT	U	ug/L	NT	27	U	ug/L	27	20	U	ug/L	20
N-Nitrosodiphenylamine	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
1,2-Diphenylhydrazine	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
4-Bromophenyl phenylether	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
Hexachlorobenzene	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Pentachlorophenol	NT	U	ug/L	NT	27	U	ug/L	27	20	U	ug/L	20
Phenanthrene	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Anthracene	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Di-n-butylphthalate	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Fluoranthene	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Pyrene	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Benzidine	NT	U	ug/L	NT	67	U	ug/L	67	50	U	ug/L	50
Butylbenzylphthalate	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
3,3'-Dichlorobenzidine	NT	U	ug/L	NT	27	U	ug/L	27	20	U	ug/L	20

SAIC IRP Project - Joe Foss Field
SAIC Project No. 01-827-03-769-22
Lab Analysis by Laucks Testing Labs
RI Data July 1989

	Lab Sample Number: 17709-1 Project Sample Number: TB-9			Lab Sample Number: 17709-2 Project Sample Number: FB-3			Lab Sample Number: 17709-3 Project Sample Number: EB-15		
	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection	Test Results	Flag	Units	Lowest Level of Detection
Benzo(a)anthracene	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Chrysene	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Bis(2-ethylhexyl)phthalate	NT	U	ug/L	NT	3	U	ug/L	3	2		ug/L	2
Di-n-octylphthalate	NT	U	ug/L	NT	3	U	ug/L	3	2	U	ug/L	2
Benzo(b)fluoranthene	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
Benzo(k)fluoranthene	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
Benzo(a)pyrene	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
Indeno(1,2,3-c,d)pyrene	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
Dibenzo(a,h)anthracene	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4
Benzo(g,h,i)perylene	NT	U	ug/L	NT	5	U	ug/L	5	4	U	ug/L	4

CHAIN-OF-CUSTODY RECORDS

Laucks
Testing Laboratories, Inc.
940 South Harney St Seattle Washington 98108 (206)767 5060

CHAIN OF CUSTODY RECORD

DATE 4-12-89 PAGE 1 OF 1

NAME SAIC
ADDRESS 8400 Westpark Dr.
McLean, VA 22102
ATTENTION Connie Samson
PROJECT NAME Joe Foss Field
JOB/PO. NO
SAMPLER (SIGNATURE) J. Eric Gibson (PRINTED NAME) J. Eric Gibson

LAB NO.	LAB SA #	SAMPLE NO	DATE	TIME	LOCATION	Purgeable Organics (VOA)	Semi-Volatiles (BNA)	Pb & As only	EP Toxicity	Total Organic Carbon	TPH	(added per Allen w/C. Simon 4/13 S.Y.)	NO. OF CONTAINERS	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
1		EB-1	4-11-89	1330	—	✓	✓	✓			X		6	
76		B1-1-15	4-11-89	1430	SITE 1	✓	✓	✓	✓	✓	X		2	
	77	B1-1-25	4-11-89		SITE 1	✓	✓	✓	✓	✓	X		3	
2		TB-1	4-11-89	1330	—	✓							1	

E-131

RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE: J. Eric Gibson	4-12-89	SIGNATURE	
PRINTED NAME: J. Eric Gibson	TIME: 1700	PRINTED NAME	TIME
COMPANY: SAIC		COMPANY	
RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE		SIGNATURE: Pam Johnson	4/13
PRINTED NAME	TIME	PRINTED NAME: Pam Johnson	TIME
		LAUCKS TESTING LABS	

TOTAL NUMBER OF CONTAINERS: 12

SHIPMENT METHOD: Fed Ex

SPECIAL SHIPMENT, HANDLING OR STORAGE REQUIREMENTS

INSTRUCTIONS:
1. Shaded areas for lab use only.
2. Complete in ballpoint pen. Draw one line through errors and initial.
3. Be specific in test requests.
4. Check off tests to be performed for each sample
5. Retain final copy after signing.
6. Provide name and telephone of your contact person

NAME Connie Samson
TELEPHONE (703) 827-8125

SHIPMENT NO. 2

Laucks Testing Laboratories, Inc.

940 South Harney St Seattle Washington 98108 (206)767 5060

CHAIN OF CUSTODY RECORD

DATE 4-13-89 PAGE 1 OF 1

NAME SAIC
ADDRESS 8400 Westpark Dr.
McLean, VA 22102
ATTENTION Connie Samson
PROJECT NAME Joe Foss Field
JOB/PO NO
SAMPLER (SIGNATURE) J. Eric Gibson (PRINTED NAME) J. Eric Gibson

LAB NO.	LAB SAM	SAMPLE NO.	DATE	TIME	LOCATION	Purgable Organics (VOA)	Semi-Volatiles (BNA)	Pb & As Only	EP Toxicity	Total Organic Carbon	TPH	NO. OF CONTAINERS	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
73		EB-3	4-13-89	0745	~~SITE 1~~	✓	✓	✓			✓	8	All work performed as
74		TB-2	4-13-89	0745	—	✓						1	specified in SOW.
78		B1-2-15	4-13-89	0745	SITE 1	✓	✓	✓	✓	✓	✓	3	
79		B1-2-25	4-13-89	0930	SITE 1	✓	✓	✓	✓	✓	✓	3	

Eric Gibson
1-605-333-5786
Darryl Van Winkle

per Eric 4/14 3:10
wants TPH on all soil & waters

E-132

RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE: J. Eric Gibson	4-13-89	SIGNATURE:	
PRINTED NAME: J. Eric Gibson	TIME: 1630	PRINTED NAME:	TIME
COMPANY: SAIC		COMPANY:	
RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE:		SIGNATURE: Pam Johnson	4/14
PRINTED NAME:	TIME	PRINTED NAME: Pam Johnson	TIME
		LAUCKS TESTING LABS	

TOTAL NUMBER OF CONTAINERS: 15

SHIPMENT METHOD: Fed Ex

SPECIAL SHIPMENT, HANDLING OR STORAGE REQUIREMENTS

INSTRUCTIONS:
1. Shaded areas for lab use only.
2. Complete in ballpoint pen Draw one line through errors and initial.
3. Be specific in test requests.
4. Check off tests to be performed for each sample
5. Retain final copy after signing
6. Provide name and telephone of your contact person

NAME Connie Samson
TELEPHONE (703) 827-8125

SHIPMENT No. 3

Laucks Testing Laboratories, Inc.

940 South Harney St Seattle Washington 98108 (206)767 5060

CHAIN OF CUSTODY RECORD

DATE 4-17-89 PAGE 1 OF 2

NAME SAIC
ADDRESS 8400 Westpark Dr.
McLean, VA 22102
ATTENTION Connie Samson
PROJECT NAME Joe Foss Field
JOB/PO NO
SAMPLER (SIGNATURE) J. Eric Gibson (PRINTED NAME) J. Eric Gibson

LAB NO	LAB SA #	SAMPLE NO	DATE	TIME	LOCATION	Purgeable Organics (VOA)	Semi-Volatiles (B/N/A)	PCB AS Only	Metals - Full Scan	EP Toxicity	Total Organic Carbon	Total Petroleum Hydro	NO. OF CONTAINERS	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
80		B3-1-0	4/14	~~1150~~ 0945	Site 3	✓	✓	–	✓	✓	✓	✓	3	
81		B3-1-5	4/14	~~1212~~ 1000		✓	✓	–	✓	✓	–	✓	3	
82		B3-2-0	4/14	~~0810~~ 1015		✓	✓	–	✓	✓	–	✓	3	
83		B3-2-0 Dup	4/14	1015		✓	✓	–	✓	✓	–	✓	3	
84		B3-2-5	4/14	1048		✓	✓	–	✓	✓	✓	✓	3	
85		B3-3-0 Dup	4/14	1337		✓	✓	–	✓	✓	–	✓	3	
86		B3-3-0 Dup	4/14	1337		✓	✓	–	✓	✓	–	✓	3	
87		B3-3-25	4/14	1350		✓	✓	–	✓	✓	✓	✓	3	
88		B3-4-0	4/15	0745		✓	✓	–	✓	✓	✓	✓	3	
89		B3-4-5	4/15	0810		✓	✓	–	✓	✓	–	✓	3	
90		B3-5-0	4/15	0915		✓	✓	–	✓	✓	–	✓	3	
91		B3-5-2.5	4/15	0925		✓	✓	–	✓	✓	✓	✓	3	
9	H20	TB-3	4/14	1100	—	✓	–	–	–	–	–	–	3	

TESTING PARAMETERS

E-133

RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE: J. Eric Gibson	4/17	SIGNATURE	
PRINTED NAME: J. Eric Gibson	TIME: 1700	PRINTED NAME	TIME
COMPANY: SAIC		COMPANY	
RELINQUISHED BY	DATE	RECEIVED BY: Pam Johnson	DATE: 4/18
SIGNATURE		SIGNATURE: Pam Johnson	
PRINTED NAME	TIME	PRINTED NAME: LAUCKS TESTING LABS	TIME

TOTAL NUMBER OF CONTAINERS.

SHIPMENT METHOD: Fed Ex

SPECIAL SHIPMENT, HANDLING OR STORAGE REQUIREMENTS

INSTRUCTIONS:

1. Shaded areas for lab use only
2. Complete in ballpoint pen Draw one line through errors and initial.
3. Be specific in test requests
4. Check off tests to be performed for each sample
5. Retain final copy after signing.
6. Provide name and telephone of your contact person

NAME Connie Samson

TELEPHONE (703) 827-8125

Laucks Testing Laboratories, Inc.

940 South Harney St Seattle Washington 98108 (206)767 5060

CHAIN OF CUSTODY RECORD

DATE 4-17-89 PAGE 2 OF 2

NAME SAIC
ADDRESS 8400 Westpark Dr
McLean, VA 22102
ATTENTION Connie Samson
PROJECT NAME Joe Foss Field
JOB/PO NO
SAMPLER (SIGNATURE) J. Eric Gibson (PRINTED NAME) J. Eric Gibson

LAB NO	LAB SA #	SAMPLE NO	DATE	TIME	LOCATION	Purgable Organics (VOA)	Semi-Volatiles (BNA)	Pb & As Only	Metals Full Scan	EP Toxicity	Total Organic Carbon	Total Petroleum Hydro	NO OF CONTAINERS
92		MW1-5-15	4/16	0945	Site 1	✓	✓	✓	–	✓	✓	✓	3
93		MW1-5-20	4/16	1000		✓	✓	✓	–	✓	–	✓	3
94		MW1-6-15	4/16	1455		✓	✓	✓	–	✓	–	✓	3
95		MW1-6-15A	4/16	1455		✓	✓	✓	–	✓	–	✓	3
96		MW1-6-20	4/16	1515		✓	✓	✓	–	✓	✓	✓	3
97		MW1-7-15	4/17	0855		✓	✓	✓	–	✓	✓	✓	3
98		MW1-7-20	4/17	0915		✓	✓	✓	–	✓	–	✓	3
99		MW1-8-15	4/17	1247		✓	✓	✓	–	✓	–	✓	3
100		MW1-8-20	4/17	1300		✓	✓	✓	–	✓	✓	✓	3
5	tk20	EB-4	4/14	1041	–	✓	✓	–	✓	–	–	✓	8
6	↓	EB-5	4/15	0745	–	✓	✓	–	✓	–	–	✓	8
7		EB-6	4/16	0912	–	✓	✓	✓	–	–	–	✓	8
8	↓	EB-7	4/17	1045	–	✓	✓	✓	–	–	–	✓	8

TESTING PARAMETERS

OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS

RELINQUISHED BY: J. Eric Gibson (SIGNATURE) — DATE 4/17
J. Eric Gibson (PRINTED NAME) — TIME 1700
SAIC (COMPANY)

RECEIVED BY (SIGNATURE) — DATE
(PRINTED NAME) — TIME
(COMPANY)

RELINQUISHED BY (SIGNATURE) — DATE
(PRINTED NAME) — TIME

RECEIVED BY: [illegible] Johnson (SIGNATURE) — DATE 4/17
[illegible] Johnson (PRINTED) — TIME
LA[illegible]TING LABS

TOTAL NUMBER OF CONTAINERS: 96

SHIPMENT METHOD: Fed Ex

SPECIAL SHIPMENT, HANDLING OR STORAGE REQUIREMENTS

INSTRUCTIONS:
1. Shaded areas for lab use only.
2. Complete in ballpoint pen Draw one line through errors and initial.
3. Be specific in test requests.
4. Check off tests to be performed for each sample
5. Retain final copy after signing
6. Provide name and telephone of your contact person

NAME Connie Samson
TELEPHONE (703) 827-8125

E-134

SHIPMENT No 4

SHIPMENT No. 4

Laucks Testing Laboratories, Inc.

940 South Harney St Seattle Washington 98108 (206)767 5060

CHAIN OF CUSTODY RECORD

DATE 4/19/89 PAGE 1 OF 1

NAME SAIC

ADDRESS 8400 Westpark Dr.
McLean, VA 22102

ATTENTION Connie Samson

PROJECT NAME Joe Foss Field

JOB/PO NO

SAMPLER (SIGNATURE) J. Eric Gibson (PRINTED NAME) J. Eric Gibson

LAB NO	LAB SA #	SAMPLE NO	DATE	TIME	LOCATION	Purgeable Organics (VOA)	Semi-Volatiles (BNA)	Full Scan Metals	Total Pet. Hydro	NO. OF CONTAINERS	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
10		FB-1	4/19/89	1138	—	✓	✓	✓	✓	8	

E-135

RELINQUISHED BY: J. Eric Gibson — DATE 4/19/89 — TIME 1330
SIGNATURE: J. Eric Gibson
PRINTED NAME: J. Eric Gibson
COMPANY: SAIC

RECEIVED BY — DATE — TIME
SIGNATURE
PRINTED NAME
COMPANY

RELINQUISHED BY — DATE — TIME
SIGNATURE
PRINTED NAME

RECEIVED BY — DATE 4/20 — TIME
SIGNATURE: Pam Johnson
PRINTED NAME: Pam Johnson
LAUCKS TESTING LABS

TOTAL NUMBER OF CONTAINERS: 8

SHIPMENT METHOD: Fed Ex

SPECIAL SHIPMENT, HANDLING OR STORAGE REQUIREMENTS

INSTRUCTIONS:
1. Shaded areas for lab use only.
2. Complete in ballpoint pen. Draw one line through errors and initial.
3. Be specific in test requests.
4. Check off tests to be performed for each sample
5. Retain final copy after signing.
6. Provide name and telephone of your contact person

NAME Connie Samson
(703) 827-0125

Laucks
Testing Laboratories, Inc.
940 South Harney St Seattle Washington 98108 (206)767 5060

CHAIN OF CUSTODY RECORD

DATE 4/26 PAGE 1 OF 1

NAME SAIC
ADDRESS 8400 NORTHPARK DRIVE
McLean, VA 22102
ATTENTION CONNIE SAMSON
PROJECT NAME JOE FOSS FIELD
JOB/PO NO
SAMPLER (SIGNATURE) A. Eric Gibson (PRINTED NAME) J. ERIC GIBSON

LAB NO	LAB SA #	SAMPLE NO	DATE	TIME	LOCATION	Purgeable Organics	Semi-Volatiles (BNA)	Tot. Pet. Hydrocarbons	Pb & As Only	EP Toxicity	Tot. Org. Carbon								NO OF CONTAINERS	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
101		MW1-9-15	4/25	0850	SITE 1	✓	✓	✓	✓	✓	–								3	REFER TO SOW
102		MW1-9-20	4/25	0910	SITE 1	✓	✓	✓	✓	✓	✓								3	FOR METHODS
103		MW1-10-15	4/26	0840	SITE 1	✓	✓	✓	✓	✓	–								3	
104		MW1-10-15 Dup	4/26	0840	SITE 1	✓	✓	✓	✓	✓	–								3	
105		MW1-10-20	4/26	0936	SITE 1	✓	✓	✓	✓	✓	✓								3	
106		MW1-11-15	4/26	1505	SITE 1	✓	✓	✓	✓	✓	–								3	
107		MW1-11-20	4/26	1525	SITE 1	✓	✓	✓	✓	✓	✓								3	
11		EQ-8	4/26	0950	–	✓	✓	✓	✓	–	–								8	
12		EQ-9	4/26	1030	–	✓	✓	✓	✓	–	–								8	
13		TB-4	4/25	0850	–	✓	–	–	–	–	–								1	
						10	9	9	9	7	3									

E-136

TESTING PARAMETERS

RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE: A. Eric Gibson	4/26	SIGNATURE:	
PRINTED NAME: J. ERIC GIBSON	TIME: 0700	PRINTED NAME:	TIME:
COMPANY: SAIC		COMPANY:	
RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE:		SIGNATURE: Pam Johnson	4/27
PRINTED NAME:	TIME:	PRINTED NAME: Pam Johnson	TIME:
COMPANY:		COMPANY: LAUCKS TESTING LABS	

TOTAL NUMBER OF CONTAINERS: 38

SHIPMENT METHOD: FED EX

SPECIAL SHIPMENT, HANDLING OR STORAGE REQUIREMENTS

INSTRUCTIONS:
1. Shaded areas for lab use only
2. Complete in ballpoint pen Draw one line through errors and initial.
3. Be specific in test requests
4. Check off tests to be performed for each sample
5. Retain final copy after signing.
6. Provide name and telephone of your contact person

NAME CONNIE SAMSON
TELEPHONE (703) 827-8125

Laucks Testing Laboratories, Inc.

940 South Harney St Seattle Washington 98108 (206)767 5060

CHAIN OF CUSTODY RECORD

DATE 4/28/89 PAGE 1 OF 1

NAME SAIC
ADDRESS 8400 Westpark Drive
McLean, VA 22102
ATTENTION Connie Samson
PROJECT NAME Joe Foss Field
JOB/PO NO
SAMPLER (SIGNATURE) J. Eric Gibson (PRINTED NAME) J. ERIC GIBSON

LAB NO	LAB SA #	SAMPLE NO	DATE	TIME	LOCATION	Purgeable Organics (VOA)	Semi-Volatiles (BNA)	Tot. Petrol. Hydro.	As, ⁴B Only	Total Metals	EP Toxicity	Tot. Org. Carbon	NO OF CONTAINERS	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
108		MW1-12-15	4/27	1535	SITE 1	✓	✓	✓	✓				3	
109		MW1-12-15A	4/27	1535	SITE 1	✓	✓	✓	✓				3	
110		MW1-12-20	4/27	1530	SITE 1	✓	✓	✓	✓		✓	✓	3	
111		MW1-13-15	4/27	0835	SITE 1	✓	✓	✓	✓				3	
112		MW1-13-20	4/27	0850	SITE 1	✓	✓	✓	✓				3	
113		MW1-14-15	4/28	1130	SITE 1	✓	✓	✓	✓				3	
114		MW1-14-20	4/28	1150	SITE 1	✓	✓	✓	✓				3	
115		BK-2-15	4/28	1620	BACKGROUND	✓	✓	✓		✓	✓	✓	3	
116		BK-2-20	4/28	1635	BACKGROUND	✓	✓	✓		✓	✓	✓	3	
117		BK-2-25	4/28	1650	BACKGROUND	✓	✓	✓		✓	✓	✓	3	
14		EB-10	4/27	1200	—	✓	✓	✓	✓				8	#15 One Red. ster.
15		EB-11	4/28	1700	—	✓	✓	✓		✓			9	Was punctured
16		TB-5	4/27	0835	—	✓							1	marked Cr.

E-137

TOTAL NUMBER OF CONTAINERS: 48

SHIPMENT METHOD: Fed Ex

SPECIAL SHIPMENT, HANDLING OR STORAGE REQUIREMENTS

RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE: J. Eric Gibson	4/28	SIGNATURE:	
PRINTED NAME: J. ERIC GIBSON	TIME: 1730	PRINTED NAME:	TIME
COMPANY: SAIC		COMPANY:	
RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE:		SIGNATURE: Pam Johnson	5/1
PRINTED NAME:	TIME	PRINTED NAME: Pam Johnson	TIME
COMPANY:		COMPANY: LAUCKS TESTING LABS	

INSTRUCTIONS:

1. Shaded areas for lab use only
2. Complete in ballpoint pen Draw one line through errors and initial.
3. Be specific in test requests.
4. Check off tests to be performed for each sample
5. Retain final copy after signing.
6. Provide name and telephone of your contact person

NAME Connie Samson

TELEPHONE (703) 827-8125

Laucks
Testing Laboratories, Inc.
940 South Harney St Seattle Washington 98108 (206)767 5060

CHAIN OF CUSTODY RECORD DATE 5/1/89 PAGE 1 OF 1

NAME SAIC
ADDRESS 8400 Westpark Drive
McLean, VA 22102
ATTENTION Connie Samson
PROJECT NAME Joe Foss Field
JOB/PO NO.
SAMPLER (SIGNATURE) J. Eric Gibson (PRINTED NAME) J. Eric Gibson

LAB NO.	LAB SA #	SAMPLE NO	DATE	TIME	LOCATION	Purgeable Organics (VOC)	Semi-Volatiles (BNA)	Tot. Pet. Hydro.	Total Metals	EP Toxicity	Tot. Org. Carbon	NO OF CONTAINERS
118		BK3-0.5	4/28/89	1800	BACKGROUND	✓	✓	✓	✓	✓	✓	3
119		BK3-5	4/28/89	1820	BACKGROUND	✓	✓	✓	✓	✓	✓	3
120		BK3-20	4/28/89	1850	BACKGROUND	✓	✓	✓	✓	✓	✓	3
17		TB-6	4/28/89	1800	—	✓						1

OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS

120 One sample jar broken in lab upon arrival to lab

E-138

RELINQUISHED BY	DATE	TIME	RECEIVED BY	DATE	TIME
J. Eric Gibson (SIGNATURE)	5/1/89	1735			
J. Eric Gibson (PRINTED NAME)					
SAIC (COMPANY)					
			Pam Johnson (SIGNATURE)	5/2	
			Pam Johnson (PRINTED NAME)		
			LAUCKS TESTING LABS (COMPANY)		

TOTAL NUMBER OF CONTAINERS: 10

SHIPMENT METHOD: Fed Ex

SPECIAL SHIPMENT, HANDLING OR STORAGE REQUIREMENTS

INSTRUCTIONS:
1. Shaded areas for lab use only.
2. Complete in ballpoint pen. Draw one line through errors and initial.
3. Be specific in test requests.
4. Check off tests to be performed for each sample.
5. Retain final copy after signing.
6. Provide name and telephone of your contact person.

NAME Connie Samson
TELEPHONE (703) 827-8125

Laucks Testing Laboratories, Inc.

940 South Harney St Seattle Washington 98108 (206)767 5060

CHAIN OF CUSTODY RECORD

DATE 5/2/89 PAGE 1 OF 3

NAME SAIC
ADDRESS 8400 WESTPARK DRIVE
MCLEAN, VA 22102
ATTENTION CONNIE SAMSON
PROJECT NAME JOE FOSS FIELD
JOB/PO NO
SAMPLER (SIGNATURE) J. Eric Gibson (PRINTED NAME) J. Eric Gibson

LAB NO	LAB SA #	SAMPLE NO	DATE	TIME	LOCATION	Aqueous Organics (VOA)	Semi-Volatiles (BNA)	Full Scan Metals	As & Pb Only	Total Pet. Hydro.	H2O Quality Para.	NO OF CONTAINERS	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
31		MW1-1	4/30	1550	SITE 1	3	3	1	1	2	4	13	All work as per
32		MW1-3	4/30	1730		3	3	—	1	2	4	13	statement of work
33		MW1-4	4/30	1830		3	3	—	1	2	1	9	
34		MW1-4Dup	4/30	1830		3	3	—	1	2	—	9	All numbers in analyte
35		MW1-5	4/30	1640		3	3	—	1	2	—	9	columns represent the
36		MW1-6	4/30	1238		3	3	—	1	2	—	9	number of bottles shipped.
37		MW1-7	4/30	1420		3	3	—	1	2	—	9	
38		MW1-8	4/30	1920		3	3	—	1	2	—	9	
39		MW1-9	4/30	0925		3	3	—	1	2	—	9	
40		MW1-10	4/30	1010		3	3	—	1	2	—	9	
41		MW1-11	4/30	1100		3	3	—	1	2	—	9	
42		MW1-12	4/30	2005		3	3	—	1	2	—	9	
43		MW1-12Dup	4/30	2005	↓	3	3	—	1	2	—	9	

E-139

RELINQUISHED BY	DATE	RECEIVED BY	DATE
J. Eric Gibson (SIGNATURE)	5/2	(SIGNATURE)	
J. ERIC GIBSON (PRINTED NAME)	TIME 1400	(PRINTED NAME)	TIME
SAIC (COMPANY)		(COMPANY)	
RELINQUISHED BY	DATE	RECEIVED BY	DATE
(SIGNATURE)		Pam Johnson (SIGNATURE)	5/3
(PRINTED NAME)	TIME	Pam Johnson (PRINTED NAME) LAUCKS TESTING LABS	TIME 8:00

TOTAL NUMBER OF CONTAINERS:

SHIPMENT METHOD: FED EX

SPECIAL SHIPMENT, HANDLING OR STORAGE REQUIREMENTS

INSTRUCTIONS:

1. Shaded areas for lab use only.
2. Complete in ballpoint pen Draw one line through errors and initial.
3. Be specific in test requests.
4. Check off tests to be performed for each sample
5. Retain final copy after signing.
6. Provide name and telephone of your contact person

NAME CONNIE SAMSON

TELEPHONE (703) 827-8125

Laucks Testing Laboratories, Inc.

940 South Harney St Seattle Washington 98108 (206)767 5060

CHAIN OF CUSTODY RECORD

DATE 5/2/89 PAGE 2 OF 3

NAME SAIC
ADDRESS 8400 WESTPARK DRIVE
MCLEAN, VA 22102
ATTENTION CONNIE SAMSON
PROJECT NAME JOE FOSS FIELD
JOB/PO NO
SAMPLER (SIGNATURE) J. Eric Gibson (PRINTED NAME) J. ERIC GIBSON

LAB NO	LAB SA #	SAMPLE NO	DATE	TIME	LOCATION	Purgeable Organics (VOC)	Semi-Volatiles (BNA)	Full Scan Metals	As & Pb Only	Total Pet Hydro	H_2O Quality Param.	NO. OF CONTAINERS	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
18		MW1-13	4/30	1455	SITE 1	3	3	—	1	2	—	9	#28 TPH bottle
19		MW1-14	4/30	1145	↓	3	3	—	1	2	—	9	had metals / HNO3
20		MW3-1	5/1	1637	SITE 3	3	3	2	—	2	—	10	on bottle was miss -
21		MW3-2	5/1	1730		3	3	2	—	2	—	10	marked
22		MW3-2Dup	5/1	1730		3	3	2	—	2	—	10	
23		MW3-3	5/2	0940		3	3	2	—	2	—	10	
24		MW3-4	5/2	1025		3	3	2	—	2	—	10	
25		MW3-5	5/1	1520	↓	3	3	2	—	2	—	10	
26		EB-12	4/30	1945	—	3	2	—	1	2	—	8	
27		EB-13	5/1	1600	—	3	2	2	—	2	—	9	
28		EB-14	5/2	1050	—	3	2	2	—	2	—	9	
29		FB-2	4/30	0840	—	3	2	2	—	2	—	9	
30		TB-7	4/30	0925	—	1	—	—	—	—	—	1	

E-140

RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE: J. Eric Gibson	5/2	SIGNATURE:	
PRINTED NAME: J. ERIC GIBSON	TIME: 1400	PRINTED NAME:	TIME:
COMPANY: SAIC		COMPANY:	
RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE:		SIGNATURE: Pam Johnson	5/3
PRINTED NAME:	TIME	PRINTED NAME: Pam Johnson	TIME: 8:00
		LAUCKS TESTING LABS	

TOTAL NUMBER OF CONTAINERS:

SHIPMENT METHOD: FED EX

SPECIAL SHIPMENT, HANDLING OR STORAGE REQUIREMENTS

INSTRUCTIONS:

1. Shaded areas for lab use only.
2. Complete in ballpoint pen Draw one line through errors and initial.
3. Be specific in test requests.
4. Check off tests to be performed for each sample.
5. Retain final copy after signing.
6. Provide name and telephone of your contact person

NAME CONNIE SAMSON

TELEPHONE (703)827-8125

Laucks
Testing Laboratories, Inc.
4940 South Hanford St Seattle Washington 98108 (206)767-5060

CHAIN OF CUSTODY RECORD

DATE 5/2/89 PAGE 3 OF 3

NAME SAIC
ADDRESS 8400 WESTPARK DRIVE
MCLEAN, VA 22102
ATTENTION CONNIE SAMSON
PROJECT NAME JOE FOSS FIELD
JOB/PO NO
SAMPLER (SIGNATURE) J. Eric Gibson (PRINTED NAME) J. ERIC GIBSON

LAB NO	LAB SA #	SAMPLE NO	DATE	TIME	LOCATION	TESTING PARAMETERS: Purgeable Organics (VOA)	Semi-Volatiles (BNA)	Full Scan Metals	As, Pb Only	Total Pet Hydr.	H_2O Quality Param.	NO OF CONTAINERS	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
44		78-8	5/1	1520	—	1	1	1	1	1	1	1	

E-141

RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE: J. Eric Gibson	5/2	SIGNATURE:	
PRINTED NAME: J. ERIC GIBSON	TIME: 1400	PRINTED NAME:	TIME:
COMPANY: SAIC		COMPANY:	
RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE:		SIGNATURE: Pam Johnson	5/3
PRINTED NAME:	TIME:	PRINTED NAME: Pam Johnson	TIME: 8:00
		LAUCKS TESTING LABS	

TOTAL NUMBER OF CONTAINERS: 240

SHIPMENT METHOD: FED EX

SPECIAL SHIPMENT, HANDLING OR STORAGE REQUIREMENTS

INSTRUCTIONS:
1. Shaded areas for lab use only.
2. Complete in ballpoint pen. Draw one line through errors and initial.
3. Be specific in test requests.
4. Check off tests to be performed for each sample.
5. Retain final copy after signing.
6. Provide name and telephone of your contact person

NAME CONNIE SAMSON
TELEPHONE (703) 827-8125

SAIC Science Applications International Corporation
An Employee-Owned Company

Chain of Custody Record

Date 7/26/88 Page 1 of 2

Shipment No. 1B

Name SAIC
Address 8400 Westpark Drive, McLean, VA
Phone Number (703) 827-8125
Project Manager Connie Samson
Project Name Joe Foss Field
Job/P.O. No.

Sampler (Signature) J. Eric Gibson (Printed Name) J. ERIC GIBSON

Laboratory No.	Matrix	Sample No.	Date	Time	Site/Zone	Volatile Org. Comp.	Base/Neutral Ext.	Tot. Pet. Hydrocarbons	As & Pb Only	No. of Containers
1	Water	TB-9	7/25	0730		1	1	1	1	1
2		EB-3	7/25	0740		3	3	2	1	9
3		EB-15	7/25	1425		3	3	2	1	9
4		GW 1-1	7/25	0940		3	3	2	1	9
5		GW 1-3	7/25	1435		3	3	2	1	9
6		GW 1-4	7/25	1525		3	3	2	1	9
7		GW 1-4D	7/25	1525		3	3	2	1	9
8		GW 1-5	7/25	1410		3	3	2	1	9
9		GW 1-6	7/25	1130		3	3	2	1	9
10		GW 1-7	7/25	1050		3	3	2	1	9
11		GW 1-8	7/25	1600		3	3	2	1	9
12		GW 1-9D	7/25	0800		3	3	2	1	9
13		GW 1-10D	7/25	0800		3	3	2	1	9

Requested Parameters

Laboratory Name Laucks
Address 940 S. Harney, Seattle, WA 98108
Phone (206) 767-5060
Contact Name Barbara Gleason

OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS

Relinquished by	Date	Received by	Date
Signature: J. Eric Gibson	7/26	Signature:	
Printed Name: J. ERIC GIBSON	Time: 1600	Printed Name:	Time
Company: SAIC		Company:	
Relinquished by	Date	Received by	Date
Signature:		Signature: Tom Johnson	7/27
Printed Name:	Time	Printed Name: Tom Johnson	Time
Company:		Company:	

Total Number of Containers:

Shipment Method: Fed Ex

Instructions

1. Fill out form completly except for shaded areas (lab use only).
2. Complete in ballpoint pen. Draw one line through errors and initial.
3. Request analyses using EPA method method numbers only. Consult the project QAPP for instructions. Complete as shown.
4. Reference all field QC samples to the applicable site or zone.
5. Note all applicable preservatives.
6. Group all sample containers and requested analyses from one sampling location together. Do not list individually

SAIC Location (circle)

Washington, D.C.
8400 Westpark Dr., McLean, VA 22102
(703) 734 2500

Oakridge
800 Oakridge Tnpk., Oakridge, TN 37830
(615) 482 9031

Paramus
One Sears Drive, Paramus, NJ 07652
(201) 599 0100

Denver
1626 Cole Boulevard, Suite 270, Golden CO 80401
(303) 231 9094

Seattle
13400B Northup Way, S38, Bellevue WA 98005
(206) 747 7899

San Diego
4224 Campus Point Building 3, San Diego CA 92121
(619) 535 7438

Science Applications International Corporation
An Employee-Owned Company

Chain of Custody Record

Date 7/26/88 Page 2 of 2

Shipment No. 1B

Name SAIC
Address 8400 Westpark Dr., McLean, VA
Phone Number (703) 827-8125
Project Manager Connie Samson
Project Name Joe Foss Field
Job/P.O. No.
Sampler (Signature) (Printed Name)

Laboratory No.	Matrix	Sample No.	Date	Time	Site/Zone	Requested Parameters: Volatile Org. Comp.	Base/Neutral Ext.	Tot. Pet Hydro	As & Pb only	No. of Containers
14		GW 1-11	7/25	0855		3	3	2	1	9
15		GW 1-12	7/25	1635		3	3	2	1	9
16		GW 1-13	7/25	1015		3	3	2	1	9
17		GW 1-14	7/25	1215		3	3	2	1	9
18		SW-1	7/26	0825		3	3	2	1	9
19		SW-2	7/26			3	3	2	1	9
20		SW-3	7/26	0900		3	3	2	1	9

Laboratory Name LAUCKS
Address 940 S. Harney
Seattle, WA
Phone (206) 767-5060
Contact Name Barbara Gleason

OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS

#18 (3 voas submitted, one voa broken in shipment)

9 Coolers Total

Relinquished by
Signature
J. Eric Gibson
Printed Name
SAIC
Company
Date 7/26
Time 1800

Received by
Signature
Printed Name
Company
Date
Time

Relinquished by
Signature
Printed Name
Company
Date
Time

Received by
Signature
Pam Johnson
Printed Name
Company
Date 7/27
Time

Total Number of Containers: 172

Shipment Method: Fed Ex

Instructions

1. Fill out form completly except for shaded areas (lab use only).
2. Complete in ballpoint pen. Draw one line through errors and initial.
3. Request analyses using EPA method method numbers only. Consult the project QAPP for instructions. Complete as shown.
4. Reference all field QC samples to the applicable site or zone.
5. Note all applicable preservatives.
6. Group all sample containers and requested analyses from one sampling location together. Do not list individually

SAIC Location (circle)

Washington, D.C.
8400 Westpark Dr., McLean, VA 22102
(703) 734 2500

Oakridge
800 Oakridge Tnpk., Oakridge, TN 37830
(615) 482 9031

Paramus
One Sears Drive, Paramus, NJ 07652
(201) 599 0100

Denver
1626 Cole Boulevard, Suite 270, Golden, CO 80401
(303) 231 9094

Seattle
13400B Northup Way, S38, Bellevue, WA 98005
(206) 747 7899

San Diego
4224 Campus Point, Building 3, San Diego CA 92121
(619) 535 7438

E-143

Appendix F:

QA/QC Program Evaluation, Chemical Analyses

APPENDIX F

QUALITY ASSURANCE/QUALITY CONTROL PROGRAM EVALUATION

This section presents the laboratory Quality Assurance/Quality Control (QA/QC) results obtained in conjunction with the Remedial Investigation (RI) field activities and the significance of the QA/QC findings. A discussion of the QA/QC program and its associated results is presented in the following Appendix.

F.1 QUALITY ASSURANCE OBJECTIVES

F.1.1 Quality Assurance Objectives

Comprehensive quality assurance objectives for the Joe Foss Field RI project were developed to provide guidelines for all field and laboratory operations. The goal of the sampling and analysis effort was to produce data of known and acceptable quality, allowing the IRP team to fully assess the impact of past and present hazardous waste practices, to identify, quantify and delineate the extent of any contamination, and to develop preliminary alternative action plans. During the course of the RI, all activities and analyses were conducted using standard procedures described in the RI Quality Assurance Project Plan (QAPP) so that known and acceptable levels of precision, accuracy, representativeness, completeness, and comparability (PARCC) were documented. The results were produced using established methodology and standard operating procedures, and were reproducible at all levels. The following sections present a general assessment of the project Data Quality Objectives (DQOs).

F.1.2 Precision

Precision is defined as the reproducibility, or degree of agreement, among replicate measurements of the same quantity. The closer the numerical values of the measurements come to each other, the more precise the measurement. Analytical precision is expressed as a percentage of the difference between results of duplicate samples for a given compound or element. Relative percent difference is calculated as:

$$\text{Precision} = \text{Relative Percent Difference} = |C_1 - C_2| / [(C_1 + C_2)/2] \times 100 \text{ percent}$$

where:

C_1 = Concentration of the compound or element in the sample
C_2 = concentration of the compound or element in the duplicate/replicate.

Precision was determined using duplicate samples (trace metal analyses), matrix spikes and matrix spike duplicates (MS/MSDs) for the analytical work performed at Joe Foss Field. The laboratory selected (for all organics analyses) one sample in 20 and split the sample into three aliquots. The first aliquot was analyzed routinely for the parameters of interest, while the other two aliquots were spiked with known quantities of the parameters of interest prior to analysis. The relative percent difference (RPD) between the two results was calculated and used as an indication of the precision of the analyses performed.

During the collection of data using field analysis methods and/or field instrumentation, precision was assessed by reporting several measurements taken at one location and comparing the results. Sample collection reproducibility was measured in the laboratory by the analysis of field replicates. Control limits for laboratory and field analyses are presented in the RI QAPP and Appendix F of this report.

Based on the evaluation of the field replicate results presented in Section F.2.1.4 and the duplicate sample and MS/MSD results presented in Sections F.2.2.2 and F.2.3.2, the overall field reproducibility and laboratory precision is acceptable.

F.1.3 Accuracy

Accuracy is defined as the degree of difference between measured or calculated values and the true value. The closer the numerical value of the measurement comes to the true value, or actual concentration, the more accurate the measurement is. Analytical accuracy is expressed as the percent recovery of a compound or element which has been added to the environmental sample at a known concentration before analysis. The equation used to calculate percent recovery is:

$$\text{Accuracy} = \text{Percent recovery} = (A_r - A_0)/A_f \times 100 \text{ percent}$$

where:

A_r = Total amount detected in spiked sample
A_0 = Amount detected in unspiked sample
A_f = Amount added to sample.

Laboratory accuracy was assessed by evaluating method blank, surrogate recovery, initial and continuing calibration, and MS/MSD results calculated from the organics (i.e., volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs)) analyses and method and

preparation blank, initial and continuing calibration, and matrix spike results calculated from the inorganics (i.e., trace metals and petroleum hydrocarbons) analyses.

Sampling accuracy was maximized by the adoption of, and adherence to, a strict QA program. All procedures conducted during the RI were documented as standard protocol and all equipment and instrumentation was properly calibrated and well-maintained. Trip blanks, field blanks, and equipment blanks were included in all sample batches to ensure that all samples were representative of the particular site from which they were sampled and to assess any cross-contamination that may have occurred. In this manner, deficiencies can be quickly documented and corrected. Specific control limit objectives for accuracy as pertaining to the RI at Joe Foss Field were presented in the RI QAPP. Based on the evaluation of the field QC blank results presented in Sections F.2.1.1, F.2.1.2, and F.2.1.3 and the laboratory QC blank, surrogate and MS/MSD, matrix spike, and initial and continuing calibration results presented in Sections F.2.2.2 and F.2.3.2, the overall field and laboratory accuracy is acceptable.

F.1.4 Representativeness

Representativeness is defined as the degree to which the data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition. Sample representativeness was ensured during the RI by collecting sufficient samples of a population medium, properly distributed with respect to location and time. Representativeness was assessed by evaluating the RPD values calculated from field replicate samples and by evaluating the concentrations of interferents detected in the field QC blanks and laboratory blanks. The reproducibility of a representative set of samples reflects the degree of heterogeneity of the sampled medium, as well as the effectiveness of the sampling technique. Based on the evaluation of the field replicate results presented in Section F.2.1.4, field QC blank results presented in Sections F.2.1.1, F.2.1.2, and F.2.1.3, and laboratory blank results presented in Sections F.2.2.2 and F.2.3.2, the samples collected during the RI are considered to be representative of the environmental condition at Joe Foss Field.

F.1.5 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another and is limited to the other PARCC parameters; only when precision and accuracy are known can one data set be compared to another. Field and laboratory procedures greatly affect comparability. To optimize comparability, only the specific methods and protocols that were specified in the RI QAPP were used to collect and analyze samples during the RI at Joe Foss Field except for arsenic and selenium, which were analyzed using EPA Methods 7061 and

7741, respectively, rather than Methods 7060 and 7740, respectively. By using consistent sampling and analysis procedures, all data sets were comparable within a specific site at the Base, between sites at the Base, or among Department of Defense installations nationwide, to ensure that remedial action decisions and priorities will be based on a consistent data base. Comparability also was ensured by the analysis of USEPA standard reference materials, establishing that analytical procedures were generating valid data.Based on the precision and accuracy assessment presented in Sections F.1.2 and F.1.3, respectively, the data collected during the RI at Joe Foss Field are considered to be comparable with that collected during previous investigations.

F.1.6 Completeness

Completeness, for the purposes of the RI at Joe Foss Field, is expressed as the percentage of data used to prepare a baseline risk assessment and upon which recommendations for site remediation are based. For analytical data to be considered usable for risk assessment and remediation recommendations, they must be satisfactorily validated. Values and concentrations reported for all analyses conducted that are labeled with the laboratory or validation qualifier "R" (i.e., unusable) may not be used in risk estimates or for remediation recommendations. Based on an evaluation of the field and laboratory results, no data were determined to be unusable and, as such, were used in all baseline risk assessments and as the basis of all the recommendations presented in this report.

F.2 QUALITY ASSURANCE/QUALITY CONTROL PROGRAM

A program of the QA/QC procedures similar to those instituted throughout the Site Inspection (SI) were also adhered to during the Remedial Investigation (RI) conducted at South Dakota Air National Guard (SDANG), Joe Foss Field, Sioux Falls, South Dakota. The intent of this QA/QC program is to ensure that collected samples are representative of the sites, and that analytical data accurately describe the characteristics and concentrations of constituents in the samples. The QA/QC program consisted of the establishment of routine QC procedures throughout the program, as well as the preparation and analysis of both laboratory and field QA/QC samples. The field QC procedures, including trip blanks, field blanks, equipment blanks, and field replicates including a summary of procedures and equipment, and level C data validation and laboratory QA results are discussed in Subsection F.1.2. The QC procedures were defined for both groundwater and soil samples. Analytical results indicate a concentration of metals, volatile organics, semivolatile organics, petroleum hydrocarbons in both soil and water. Analyses were conducted for miscellaneous inorganics in water and total organic carbon was analyzed for in soils. A complete set of the analytical data and a QA/QC summary can be found in Appendices E and F, respectively.

F.2.1 Field Internal Quality Control Checks

Trip blanks, field blanks, equipment blanks, and field replicates were collected and analyzed along with environmental samples. These samples were intended as QC checks of the sample collection and handling procedures, as well as of equipment decontamination procedures.

During the groundwater and soil sampling field effort, the U.S. Environmental Protection Agency (EPA) guidelines required the use of reagent-grade water for blanks, as described in the EPA manual, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, Third Edition, 1986 (SW-846). All blanks (except trip blanks, which were prepared at Laucks Testing Laboratory and sent to SDANG) were prepared in the field using randomly selected sample containers from the same container supply that later would be used in transporting environmental samples from the site. Reagent-grade water was used to prepare these field check samples, regardless of the environmental medium because:

- Reagent grade water simulates the physical characteristics of groundwater and surface water.
- Reagent-grade water simulates a reproducible fraction (moisture) of soils and sediments.
- No reproducible, affordable material is available that simulates clay and the organic portion of soils and sediments.
- An organic or aqueous reservoir is necessary for the absorption, dissolution, or solvation of organic or inorganic contaminants.

All sample containers were provided by Laucks Testing Laboratory and were shipped with chain-of-custody records. These records were completed by field personnel and returned with the samples. The following QC samples were collected for each day of sampling:

- One trip blank per container per sampling team for every batch of volatile organic compound (VOC) samples (soil and water).
- One field blank per sampling team to be analyzed for the parameters of interest at any particular site.
- One set of equipment blanks for every day of soil sampling for analysis of all parameters.One bailer wash was collected for every 10 groundwater samples sent to the laboratory for analysis of all parameters.
- One field replicate for every 10 samples.

F.2.1.1 Trip Blanks

Trip blanks were prepared prior to the sampling trip by pouring reagent-grade water into prepared sample bottles. These sample bottles were randomly selected from the supply of prepared

sample bottles. Sample containers were filled and preserved to yield a representative blank for each type of VOC analysis, resulting in a complete trip blank for the sampling event. These trip blanks were prepared at Laucks Testing Laboratory, shipped to SDANG along with unused sample bottles, transported to the sites, and then shipped back to the laboratory with the environmental samples collected during the sampling event. The analysis results of trip blanks were used to assess the contamination of sample containers during transport to and storage at the site, to assess contamination of the samples during transport back to the laboratory, and to judge overall whether the contaminants detected in the environmental samples were contributed during transport or by sample containers or are representative of the present environmental condition at SDANG. One trip blank was included in each shipping container containing samples for VOC analysis. Nine trip blanks were analyzed for VOCs by Laucks Testing Laboratory. The results of the trip blanks are shown in Table F-1. A summary of the results can be found below:

- Three trip blanks (TB-7, TB-8, and TB-9) accompanied water samples collected at SDANG and were sent to Laucks Testing Laboratory to be analyzed for VOCs by EPA Method SW 8240. Acetone was detected in one sample, TB-9, with a concentration of 8 micrograms per liter (µg/L). Acetone was detected in environmental samples associated with TB-9 (GWI-4 and GWI-4DUP, 6 µg/L each) with concentrations less than TB-9; therefore, this contaminant had little impact on the overall data quality.
- Six trip blanks (TB-1 through TB-7, inclusive) were collected at SDANG and accompanied the soil samples to Laucks Testing Laboratory for VOC analysis. No contaminants were detected.
- The volatile compounds detected in the environmental samples represent the environmental condition of the location where collection occurred and are not present as a result of any external sources discussed previously.

F.2.1.2 Field Blanks

Field blanks were prepared at the beginning of each sampling event at each discrete sampling site by pouring reagent-grade water into prepared sample bottles. These sample bottles were randomly selected from the supply of prepared sample bottles received from Laucks Testing Laboratory. A sample container was selected, filled, and preserved in a manner that was appropriate for each type of analysis for which environmental samples were collected. The field blanks were then analyzed for the same analytes as the environmental samples particular to that site. Because field blanks are collected under the same conditions, the results of the field blank analyses were used to indicate the presence of external contaminants (e.g., drill rig or aircraft exhaust, dust particles) that may have been introduced into samples during collection and to make an overall judgement as to whether the contaminants detected in the environmental samples were contributed by conditions independent of the formation sampled or are representative of conditions at SDANG. Field blanks contaminated during transport were assessed by simultaneous evaluation of trip blank

TABLE F-1. ANALYTICAL RESULTS OF FIELD BLANKS, TRIP BLANKS, AND EQUIPMENT BLANKS
FOR SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Parameter	Units	Lower Limit of Detection	FB-1	FB-2	FB-2RE	FB-3	TB-1	TB-2	TB-3	TB-4	TB-5	TB-6	TB-7	TB-8	TB-9
PETROLEUM HYDROCARBONS	mg/L	0.5	ND	ND	NT	ND	NT	NT	NT	NT	NT	NT	NT	NT	NT
DISSOLVED METALS					NT	ND	NT	NT	NT	NT	NT	NT	NT	NT	NT
Dissolved Arsenic	µg/L	5	ND	ND											
Dissolved Lead	µg/L	1	ND	2.6											
Dissolved Selenium	µg/L	5	ND	ND											
Dissolved Copper	µg/L	1	2	ND											
Dissolved Nickel	µg/L	2	ND	ND											
Dissolved Cadmium	µg/L	1	ND	ND											
Dissolved Chromium	µg/L	1	ND	ND											
Dissolved Zinc	µg/L	1	8	5											
VOLATILE COMPOUNDS			ND		NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Total Xylenes	µg/L	1		ND											ND
Ethylbenzene	µg/L	1		ND											ND
Methylene Chloride	µg/L	1		2(B)											ND
Toluene	µg/L	1		ND											ND
Acetone	µg/L	5		ND											8
Benzene	µg/L	1		ND											ND
TIC Total	µg/L	--		ND											ND
SEMIVOLATILE COMPOUNDS				NT		ND	NT	NT	NT	NT	NT	NT	NT	NT	NT
Bis(2-ethylhexyl)phthalate	µg/L	2	2(B)		1(JB,EH)										
Naphthalene	µg/L	4	ND		ND										
2-Methylnaphthalene	µg/L	2	ND		ND										
Acenaphthene	µg/L	2	ND		ND										
Dibenzofuran	µg/L	2	ND		ND										
Fluorene	µg/L	2	ND		ND										
Phenanthrene	µg/L	2	ND		ND										
Anthracene	µg/L	2	ND		ND										
Fluoranthrene	µg/L	2	ND		ND										
Pyrene	µg/L	2	ND		ND										
Benzo(a)enthracene	µg/L	2	ND		ND										
Chrysene	µg/L	2	ND		ND										
Benzo(b)fluoranthene	µg/L	4	ND		ND										
Benzo(k)fluoranthene	µg/L	4	ND		ND										
Benzo(a)pyrene	µg/L	4	ND		ND										
Indeno(1,2,3-c,d)pyrene	µg/L	4	ND		ND										
2,4-Dimethylphenol	µg/L	2	ND		ND										
Di-n-butyl phthalate	µg/L	2	ND		ND										
Di-n-octyl phthalate	µg/L	2	ND		ND										
Diethyl phthalate	µg/L	2	ND		ND										
TIC Total	µg/L	--	31		13										

TABLE F-1. ANALYTICAL RESULTS OF FIELD BLANKS, TRIP BLANKS, AND EQUIPMENT BLANKS FOR SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

Parameter	Units	Lower Limit of Detection	QA-1B FB	QA-2B EB
PETROLEUM HYDROCARBONS	mg/L	0.5	ND	ND
DISSOLVED METALS				
Dissolved Arsenic	µg/L	5	ND	ND
Dissolved Lead	µg/L	1	ND*	ND*
Dissolved Selenium	µg/L	5	NT	NT
Dissolved Copper	µg/L	1	NT	NT
Dissolved Nickel	µg/L	2	NT	NT
Dissolved Cadmium	µg/L	1	NT	NT
Dissolved Chromium	µg/L	1	NT	NT
Dissolved Zinc	µg/L	1	NT	NT
VOLATILE COMPOUNDS				
Total Xylenes	µg/L	1	ND	ND
Ethylbenzene	µg/L	1	ND	ND
Methylene Chloride	µg/L	1	ND	ND
Toluene	µg/L	1	ND	ND
Acetone	µg/L	5	ND	ND
Benzene	µg/L	1	ND	ND
TIC Total	µg/L	--	NT	NT
SEMIVOLATILE COMPOUNDS				
Bis(2-ethylhexyl)phthalate	µg/L	2	3	ND
Naphthalene	µg/L	4	ND	ND
2-Methylnaphthalene	µg/L	2	ND	ND
Acenaphthene	µg/L	2	ND	ND
Dibenzofuran	µg/L	2	ND	ND
Fluorene	µg/L	2	ND	ND
Phenanthrene	µg/L	2	ND	ND
Anthracene	µg/L	2	ND	ND
Fluoranthrene	µg/L	2	ND	ND
Pyrene	µg/L	2	ND	ND
Benzo(a)anthracene	µg/L	2	ND	ND
Chrysene	µg/L	2	ND	ND
Benzo(b)fluoranthene	µg/L	4	ND	ND
Benzo(k)fluoranthene	µg/L	4	ND	ND
Benzo(a)pyrene	µg/L	4	ND	ND
Indeno(1,2,3-c,d)pyrene	µg/L	4	ND	ND
2,4-Dimethylphenol	µg/L	2	ND	ND
Di-n-butyl phthalate	µg/L	2	ND	2
Di-n-octyl phthalate	µg/L	2	ND	ND
Diethyl phthalate	µg/L	2	ND	ND
TIC Total	µg/L	--	NT	NT

results. The results of the field blanks are presented in Table F-1. Analytical results providing information about contamination from sampling techniques at SDANG are briefly discussed in the remainder of this subsection.

- Two field blanks (FB-2 and FB-3) associated with groundwater sampling were analyzed for trace metals. Analytical methods and results are as follows:
  - Lead was analyzed by EPA Method SW 7421 (graphite furnace atomic absorption [GFAA]). Lead was detected in one field blank, FB-2 (2.6 µg/L), associated with Site 3 – Base Fire Training Area monitoring wells.
  - Zinc was analyzed by EPA Method 6010 (inductively coupled argon plasma [ICAP]). This element was detected in one field blank, FB-2 (5 µg/L), associated with Site 3 – Base Fire Training Area monitoring wells.
- One field blank (FB-1) was prepared and analyzed with soil samples collected at SDANG.
  - Copper and zinc were detected in concentrations (copper at 2 µg/L and zinc at 8 µg/L) less than five times that detected in the associated environmental samples. Therefore, the concentrations of these elements detected in the associated environmental samples are considered to be representative of the environmental condition.
  - Bis(2-ethylhexyl)phthalate was detected in FB-1; however, this compound was also detected in the associated laboratory method blank (15928-BO425MSVWLM with a concentration of 1 µg/L). Therefore, the bis(2-ethylhexyl)phthalate detected in this field blank (2 µg/L) is considered to have been introduced in the laboratory. Hence, field practices have not significantly introduced bis(2-ethylhexyl)phthalate into the environmental samples.
- The concentrations detected in the soil samples are reported uncorrected for the following reasons:
  - Since trace metals are relatively nonvolatile and the water used in field blank preparation does not come in contact with the sampling apparatus, the concentrations detected (mentioned previously) were contributed solely by the water. Therefore, it is unlikely that the contamination detected in the field blanks is the origin of that detected in groundwater samples.
  - These field blanks were also analyzed for purgeable organic compounds, total petroleum hydrocarbons, and total organic carbon compounds. None of these were detected in any groundwater sampling field blanks.

F.2.1.3 Equipment Blanks

Equipment blanks (bailer washes) were prepared for manual and small automated sampling equipment used to collect environmental samples (i.e., equipment blanks were not prepared for drill rig sampling equipment). Equipment blanks were collected during the sampling day by pouring reagent-grade water into/through/over a clean piece of sampling equipment, such as bailers, split-spoon samples, shovels, and trowels, and then dispensing it into prepared sample bottles. These sample bottles were randomly selected from the supply of prepared sample bottles received from Laucks Testing Laboratory. The results of the analyses of equipment blanks will be used to

assess the efficiency of equipment decontamination procedures in preventing cross-contamination between samples and to judge overall whether the contaminants detected in the environmental samples were contributed by the sampling equipment or are representative of conditions at SDANG. The results of the equipment blank analyses are provided in Table F-2.

- Four equipment blanks (EB-12, EB-13, EB-14, and EB-15), were sent with groundwater samples to Laucks Testing Laboratory for analysis. A summary of the results are presented below:
  - Copper was detected using EPA Method SW 6010. Copper was detected in one equipment blank, EB-13 (3 µg/L), associated with groundwater samples collected from Site 1 – Underground Fuel Storage Area and Site 3 – Base Fire Training Area. Copper was not detected in the associated trip blanks or field blanks. However, copper is a common metal found in water, and the low level of contamination is likely to be caused by the water used to decontaminate the equipment. Since the water used for decontamination does not come in contact with the sample, the effect of the copper in the equipment blank relative to its impact on related environmental samples should be negligible.
  - Lead was detected using EPA Methods SW 6010 (ICAP) and SW 7421 (GFAA) in two blanks, EB-13 and EB-14, at concentrations of 1.4 and 1.9µg/L, respectively. Since lead was detected in a higher concentration in an associated field blank, the lead contamination in these equipment blanks also may be from the water used in decontamination. Therefore, it is unlikely that the lead contamination detected in the field blanks and equipment blanks is the origin of that detected in the groundwater samples.
  - Zinc was detected, using EPA Method SW 6010 (ICAP) in two equipment blanks EB-13 and EB-14, at concentrations of 14 and 5µg/L, respectively. Zinc was detected in the associated environmental samples with concentrations of 22 to 53 µg/L. In addition, zinc was detected in the associated field blank (FB-2). Since zinc was detected in the water used to prepare the field blank, then this water is also likely to be the source of zinc detected in these equipment blanks. Each bailer is rinsed with hexane immediately following the reagent-grade water rinse; therefore, the zinc detected in the environmental samples is considered to be representative of the groundwater at SDANG.
- Four equipment blanks associated with groundwater sampling (E-12 through EB-15, inclusive), were shipped to Laucks Testing Laboratory for VOC analysis. Methylene chloride was detected in three blanks EB-12, EB-13 and EB-14 each with concentrations of 2 µg/L. This compound also was detected in the associated laboratory method blanks. Xylenes (1 µg/L), toluene (2 µg/L), and acetone (7µg/L) were detected in one equipment blank, EB-15. Xylenes were not detected in the field blanks or trip blanks. Since xylenes were detected in the equipment blank, however, sampling procedures could be the source of contamination. If xylene concentrations in the equipment blanks were less than five times the associated environmental sample concentrations, then the contamination is considered to be representative of the environmental condition. Xylene contamination in samples GW1-4 and GW1-12 are from sampling procedures or apparatuses; otherwise, the xylene contamination is representative of the environmental condition. Site 1 – Underground Fuel Storage Area monitoring well samples provide high levels of xylene contamination that resulted in equipment that was difficult to completely decontaminate. Toluene was not detected in any groundwater samples, so it was introduced into the equipment blanks by the equipment. Toluene, a common laboratory contaminant, is attributed to environmental conditions in this case. Acetone is normally used in the laboratory to clean glassware and although it sometimes contaminates the environmental samples, it did not in this case. Acetone was found in groundwater samples as a result of

TABLE F-2. ANALYTICAL RESULTS OF EQUIPMENT BLANKS FOR SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Parameter	Units	Lower Limit of Detection	EB-1	EB-3	EB-4	EB-5	EB-6	EB-7	EB-8	EB-9	EB-10	EB-11	EB-12	EB-12 RE	EB-13	EB-13 RE
PETROLEUM HYDROCARBONS	mg/L	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NT	ND	NT
DISSOLVED METALS														NT		NT
Dissolved Arsenic	µg/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	
Dissolved Lead	µg/L	1	2.0	1.0	ND	1.9	1.7	ND	1.5	1.1	2.5	1.2	ND		1.4	
Dissolved Selenium	µg/L	5	NT	NT	ND	ND	NT	NT	NT	NT	NT	ND	NT		ND	
Dissolved Copper	µg/L	1	NT	NT	3	4	NT	NT	NT	NT	NT	ND	NT		3	
Dissolved Nickel	µg/L	2	NT	NT	ND	4	NT	NT	NT	NT	NT	ND	NT		ND	
Dissolved Cadium	µg/L	1	NT	NT	ND	ND	NT	NT	NT	NT	NT	ND	NT		ND	
Dissolved Chromium	µg/L	1	NT	NT	2	4	NT	NT	NT	NT	NT	ND	NT		ND	
Dissolved Zinc	µg/L	1	NT	NT	9(P)	12	NT	NT	NT	NT	NT	6	NT		14	
VOLATILE COMPOUNDS														NT		NT
Total Xylenes	µg/L	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	
Ethylbenzene	µg/L	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	
Methylene Chloride	µg/L	1	4	4	5	4	4	4	3	ND	2	3	2(B)		2(B)	
Toluene	µg/L	1	2	2	ND	ND	3	ND	ND	ND	ND	2	ND		ND	
Acetone	µg/L	5	ND	13	18	16	10	ND	15	20	ND	ND	ND		ND	
Benzene	µg/L	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	
TIC Total	µg/L	--	ND	ND	ND	ND	9	ND	ND	ND	ND	ND	96		43	
SEMIVOLATILE COMPOUNDS													NT		NT	
Bis(2-ethylhexyl)phthalate	µg/L	2	1(JB)	1(JB)	1(JB)	1(JB)	ND	1(JB)	1(JB)	4(B)	2(JB)	2(B)		38(B,EH)		1(JB,EH)
Naphthalene	µg/L	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
2-Methylnaphalthene	µg/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
Acenaphthene	µg/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
Dibenzofuran	µg/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
Fluorene	µg/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
Phenanthrene	µg/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
Anthracene	µg/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
Fluoranthrene	µg/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
Pyrene	µg/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
Benzo(a)anthracene	µg/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
Chrysene	µg/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
Benzo(b)fluoranthene	µg/L	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
Benzo(k)fluoranthene	µg/L	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
Benzo(a)pyrene	µg/L	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
Indeno(1,2,3-c,d)pyrene	µg/L	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
2,4-Dimethylphenol	µg/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
Di-n-butyl phthalate	µg/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
Di-n-octyl phthalate	µg/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
Diethyl phthalate	µg/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND
TIC Total	µg/L	--	21	26	14	12	34	12	12	11	ND	27		24		23

TABLE F-2. ANALYTICAL RESULTS OF EQUIPMENT BLANKS FOR SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

Parameter	Units	Lower Limit of Detection	EB-14	EB-14 RE	EB-15
PETROLEUM HYDROCARBONS	mg/L	0.5	ND	NT	ND
DISSOLVED METALS				NT	
Dissolved Arsenic	µg/L	5	ND		ND
Dissolved Lead	µg/L	1	1.9		ND
Dissolved Selenium	µg/L	5	ND		NT
Dissolved Copper	µg/L	1	ND		NT
Dissolved Nickel	µg/L	2	ND		NT
Dissolved Cadium	µg/L	1	ND		NT
Dissolved Chromium	µg/L	1	ND		NT
Dissolved Zinc	µg/L	1	5		NT
VOLATILE COMPOUNDS				NT	
Total Xylenes	µg/L	1	ND		1
Ethylbenzene	µg/L	1	ND		ND
Methylene Chloride	µg/L	1	2(B)		ND
Toluene	µg/L	1	ND		2
Acetone	µg/L	5	ND		7
Benzene	µg/L	1	ND		ND
TIC Total	µg/L	--	17		ND
SEMIVOLATILE COMPOUNDS			NT		
Bis(2-ethylhexyl)phthalate	µg/L	2		1(JB,EH)	2
Naphthalene	µg/L	4		ND	ND
2-Methylnaphalthene	µg/L	2		ND	ND
Acenaphthene	µg/L	2		ND	ND
Dibenzofuran	µg/L	2		ND	ND
Fluorene	µg/L	2		ND	ND
Phenanthrene	µg/L	2		ND	ND
Anthracene	µg/L	2		ND	ND
Fluoranthrene	µg/L	2		ND	ND
Pyrene	µg/L	2		ND	ND
Benzo(a)anthracene	µg/L	2		ND	ND
Chrysene	µg/L	2		ND	ND
Benzo(b)fluoranthene	µg/L	4		ND	ND
Benzo(k)fluoranthene	µg/L	4		ND	ND
Benzo(a)pyrene	µg/L	4		ND	ND
Indeno(1,2,3-c,d)pyrene	µg/L	4		ND	ND
2,4-Dimethylphenol	µg/L	2		ND	ND
Di-n-butyl phthalate	µg/L	2		ND	ND
Di-n-octyl phthalate	µg/L	2		ND	ND
Diethyl phthalate	µg/L	2		ND	3
TIC Total	µg/L	--		24	39

sample procedures or equipment, not from the environment. Acetone in environmental samples needs to be 10 times greater than the concentration found in the associated equipment blank. Since acetone was not detected in the environmental samples at concentrations greater than 10 times that detected in the equipment blanks, the acetone detected in the environmental samples was disregarded.

- Four equipment blanks (EB-12 through EB-15, inclusive), were collected and analyzed for semivolatile organic compounds (SVOCs) using EPA Method SW 3510/8270. Bis(2-ethylhexyl)phthalate was detected in two equipment blanks EB-12RE and EB-15, at concentrations of 38 µg/L and 2 µg/L, respectively. Bis(2-ethylhexyl)phthalate was detected in the method blank (15928-BO512MSVWLK with a concentration of 1 µg/L) associated with EB-12RE. Since the concentration of this compound detected in EB-12RE is greater than ten times the concentration detected in the method blank, bis(2-ethylhexyl)phthalate is considered to have originated from incomplete equipment decontamination or the reagent-grade water used to prepare this equipment blank. However, the contamination in Site 3 – Base Fire Training Area monitoring wells, July groundwater sampling, and wells MW-1-13 and MW-1-14 all had levels of contamination similar (3-47 µg/L) to those in the blanks. Since contamination levels in the blanks are greater than the contamination levels in the environmental samples, the contamination is likely from the equipment rinsate water. Diethylphthalate was detected in EB-15 at a concentration of 3 µg/L. Since this is a low-level contaminant and it was measured at concentrations in the environmental samples greater than 10 times that of the equipment blank, the contamination from sampling procedures or apparatus did not contribute significantly to that of the groundwater.
- Ten equipment blanks associated with soil sampling (EB-1, EB-3 through EB-11 inclusive), were analyzed for trace metals. The following is a brief discussion of the analytical results that provide information concerning equipment cross-contamination during soil sampling at SDANG.
  - Although ten equipment blanks accompanied soil samples sent to Laucks Testing Laboratory for analysis, only three (EB-4, EB-5, and EB-11) were analyzed for copper. Copper was detected in two equipment blanks, EB-4 and EB-5 at concentrations of 3 and 4 µg/L, respectively. This element was detected in the soil samples associated equipment blanks EB-4 and EB-5 with concentrations (9 to 22 mg/Kg) significantly greater than that of the blank. It can be concluded that contamination resulting from sampling procedures or apparatus may not have contributed significantly to the environmental samples collected from Site 3 – Base Fire Training Area soil borings and Site 1 – Underground Fuel Storage Area drilling of monitoring wells and soil borings.
  - Three equipment blanks (EB-4, EB-5, and EB-11) were analyzed for chromium. This element was detected in two blanks, EB-4 and EB-5 at 2 and 4 µg/L, respectively. It can be concluded that chromium was not significantly introduced as a result of sampling procedures or from sampling apparatus, because the concentration in the equipment blanks were less than five times that of the concentration of the chromium in related environmental samples (12 to 29 mg/Kg), those of Site 3 – Base Fire Training Area soil borings and Site 1 – Underground Fuel Storage Area drilling of monitoring wells and soil borings.
  - All ten equipment blanks were analyzed for lead by EPA Method SW 7421, using GFAA. Lead was detected in eight blanks from 1.0 to 2.5 µg/L. In several samples, B3-1-5, B3-2-5, B3-2-2.5, B3-4-0, B3-4-5, B3-5-0 and B3-5-2.5, the data (lead concentrations in environmental samples range from 2.0 to 15.1 mg/Kg) indicate that the contamination comes from present soil conditions rather than being introduced from outside sources, as previously discussed with copper and chromium.

- Nickel was analyzed in three equipment blanks (EB-4, EB-5, and EB-11) and detected in only one, EB-5 at a concentration of 4 µg/L. For the same reasons as these it can be concluded for copper, chromium, and lead that sampling procedures or sampling apparatuses did not contribute significantly to the nickel (17 to 31 mg/Kg) detected in the soil samples.
- Zinc was detected in three blanks EB-4, EB-5, and EB-11 at concentrations of 9, 12, and 16 µg/L, respectively. Zinc contamination in environmental samples ranged in concentration from 46 to 110 µg/L. Since the zinc reported in the environmental samples is much greater than in the concentrations in the blank, the zinc contributed from the sampling effort is minimal.

• Since equipment blank results are reported in parts per billion and soil results are reported in parts per million (a difference of three orders of magnitude), it is unlikely that the equipment decontamination procedures impacted the analytical results.

F.2.1.4 Field Replicates

Field replicates were collected at the same time and using the same techniques as the planned environmental samples. Replicate locations were either preselected prior to the daily sampling activities or selected based on an abnormal instrument reading or an unforeseen field condition (e.g., floating product or strong fuel odor). The identification of each replicate was coded to prevent external laboratory bias.

Replicate water samples were collected with a Teflon® bailer. For the purposes of the project, water samples were designated as replicates even though several bailer volumes were needed to fill the sample containers, depending on the number required at any one location. The volatile fraction was collected first to minimize compound volatilization. The first bailer volumes were used to fill the VOC vials of the environmental samples. Subsequent volumes were used to fill the replicate VOC vials. Sample volumes for the remaining analyses were collected after the last VOC vial was filled.

Replicate soil samples were collected with a 2-inch diameter split-spoon sampler. The sample portion to be analyzed for VOCs was collected first to minimize sample volatilization. The soil core was split lengthwise using a Teflon® spatula, and the environmental sample was collected by transferring a portion of the soil to the sample container. The replicate was collected immediately after, using the same technique. After the volatile portion was collected, the remaining soil was mixed on a Teflon® board and subdivided between the remaining sample containers. This mixing was used only for the samples to be analyzed for inorganic (i.e., metals) and semivolatile organic (e.g., extractables, organochlorine pesticides) parameters.

The results of the field replicate analyses were used to assess the precision of the field sampling methods and to make an overall judgement as to whether the contaminants detected in the environmental samples are representative of conditions at SDANG. The results of the field replicate analyses are presented in Tables F-3 and F-4. A summary of the field replicate results is provided below:

- Field replicates were collected in quantities equal to 11 percent of the total number of environmental samples. Five field replicates were taken during the groundwater sampling at SDANG. The control limits for water samples are established as 20 percent-cases where relative percent differences (RPDs) between the sample and its duplicate exceed control limits are discussed below:
  - Many of the analytes of the field-replicated samples that were analyzed were not detected (92 to 100 percent of the analytes in the applicable samples). Of the detected analytes, only as many as 8 percent were outside the arbitrarily established control limit of 20 percent RPD. Another criteria, an established Contract Laboratory Protocol (CLP), for the detected analytes should be considered: those detected at levels greater than five times the minimum detection limit. Of the analytes detected with RPDs greater than 20 percent and with a concentration greater than five times the minimum detection limit, only four analytes in two samples were outside of the previously established control limits for field precision in groundwater sampling. The RPD control limits for xylene were exceeded in samples MW-1-4 (81 percent) and MW-1-12 (117 percent). The RPD control limit for total petroleum hydrocarbon (TPH) was exceeded in sample MW-1-14 (35.7 percent). The RPD control limit for ethylbenzene was exceeded in MW-1-12 (137 percent).
  - No corrective actions were taken because groundwater sampling precision was considered in control. Sample heterogeneity may account for the case where TPH was above the control limit. Sample volatilization may account for the RPDs of the xylenes and ethylbenzene that were considered outside the control limits.
  - Soil field replicates were collected in quantities equal to 13 percent of the total number of environmental samples. Five field replicates were taken during soil sampling at SDANG. Precision in field sampling was determined by RPDs of field replicates. A summary of the out-of-control (greater than thirty percent RPD) cases is presented below:
    - Many of the analytes in the soil-replicated samples were undetected after analysis (88 to 96 percent of the targeted analytes were undetected). Considering only the detected values, less than 3 percent of the RPD values were above the established control limits of 30-percent RPD maximum. An analyte detected with a concentration five times greater than the minimum detection limit and a RPD greater than 30 percent is considered outside the control limits. Ethylbenzene and xylenes were above the previously established control limits (B3-3-0 with RPDs of 44.8 and 104, respectively). Arsenic was also outside the established control limits (MW-1-6-15 with a 37.3 RPD). TPH was outside the control limits in sample MW-1-12-15 with a RPD of 44.8.
    - No corrective actions were taken because soil sampling precision was considered in control. For the cases where TPH and arsenic were out-of-control, sample heterogeneity may account for this situation. Mixing of the soil in the field proves to be difficult in the cases of metals and TPH. Sample volatilizational, though preventative measures are taken, could still be a problem in the cases of ethylbenzene and xylene.

TABLE F-3. RESULTS OF REPLICATED SOIL SAMPLE ANALYSES FOR SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Parameters	Units	Lower Limit of Detection	B3-2-0	B3-2-0 DUP	B3-3-0 DUP	B3-3-0 DUP
Associated Field QC Samples			EB-4 TB-3 FB-1	EB-4 TB-3 FB-1	EB-4 TB-3 FB-1	EB-4 TB-3 FB-1
PETROLEUM HYDROCARBONS	mg/Kg DB	20	59(H)	96(H)	34(H,MR)	130(H)
TOTAL ORGANIC CARBON	% DB	0.1	NT	NT	NT	NT
METALS						
Lead	mg/Kg DB	0.5	8	7.8	6.2	7.9
Arsenic	mg/Kg DB	0.5	12	9.2	8.9	8.4
Selenium	mg/Kg DB	0.5	ND	ND	ND	ND
Copper	mg/Kg DB	1	10	10	9	11
Beryllium	mg/Kg DB	0.1	0.4	0.4	0.3	0.3
Nickel	mg/Kg DB	2	23	21	23	21
Cadmium	mg/Kg DB	0.5	ND	ND	ND	ND
Chromium	mg/Kg DB	1	15	12	12	12
Zinc	mg/Kg DB	1	48	48	46	49
VOLATILE COMPOUNDS				ND		
Methylene Chloride	µg/Kg DB	2	4		ND	ND
Acetone	µg/Kg DB	8	ND		ND	ND
Toluene	µg/Kg DB	2	ND		ND	ND
Ethylbenzene	µg/Kg DB	2	ND		2700	17000
Total Xylenes	µg/Kg DB	2	ND		5400	17000
TIC Total	µg/Kg DB	--	ND		180000	390000
SEMIVOLATILE COMPOUNDS						
Naphthalene	µg/Kg DB	76	ND	ND	390(H,J)	750(H,J)
2-Methylnaphthalene	µg/Kg DB	38	ND	ND	ND	180(H,J)
Acenaphthene	µg/Kg DB	38	ND	ND	ND	ND
Dibenzofuran	µg/Kg DB	38	ND	ND	ND	ND
Fluorene	µg/Kg DB	38	ND	ND	ND	ND
Phenanthrene	µg/Kg DB	38	ND	ND	ND	ND
Anthracene	µg/Kg DB	38	ND	ND	ND	ND
Di-n-butyl phthalate	µg/Kg DB	38	ND	ND	ND	ND
Fluoranthene	µg/Kg DB	38	ND	ND	ND	ND
Pyrene	µg/Kg DB	38	ND	25(J,H)	ND	ND
Benzo(a)anthracene	µg/Kg DB	38	ND	ND	ND	ND
Chrysene	µg/Kg DB	38	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	µg/Kg DB	38	85(B)	100(B,H)	ND	ND
Benzo(b)fluoranthene	µg/Kg DB	76	ND	31(H,JX)	ND	ND
Benzo(k)fluoranthene	µg/Kg DB	76	ND	31(H,JX)	ND	ND
Benzo(a)pyrene	µg/Kg DB	76	ND	ND	ND	ND
Indeno(1,2,3-c,d)pyrene	µg/Kg DB	76	ND	ND	ND	ND
Dibenzo(a,h)anthracene	µg/Kg DB	76	ND	ND	ND	ND
Benzo(g,h,i)perylene	µg/Kg DB	76	ND	ND	ND	ND
Diethyl phthalate	µg/Kg DB	38	ND	ND	ND	ND
Dimethyl phthalate	µg/Kg DB	38	ND	ND	ND	ND
4-Methylphenol	µg/Kg DB	38	ND	ND	ND	ND
Phenol	µg/Kg DB	38	ND	49	ND	ND
Di-n-octyl phthalate	µg/Kg DB	38	12(J)	ND	ND	ND
TIC Total	µg/Kg DB	--	28000	31000	460090	520000

TABLE F-3. RESULTS OF REPLICATED SOIL SAMPLE ANALYSES FOR SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

Parameters	Units	Lower Limit of Detection	MW1-6-15	MW1-6-15 DUP	MW1-10-15	MW1-10-15 DUP	MW1-12-15	MW1-12-15 DUP
Associated Field QC Samples			EB-6 TB-3 FB-1	EB-6 TB-3 FB-1	EB-9 TB-4 FB-2	EB-9 TB-4 FB-2	EB-10 TB-5 FB-2	EB-10 TB-5 FB-2
PETROLEUM HYDROCARBONS	mg/Kg DB	20	ND	ND	ND	ND	730(H)	470(H)
TOTAL ORGANIC CARBON	% DB	0.1	NT	NT	NT	NT	NT	NT
METALS								
Lead	mg/Kg DB	0.5	2.8	3.2	3.3	3.0	2.6	2.8
Arsenic	mg/Kg DB	0.5	4.8	7.0	2.2	2.2	2.8	2.8
Selenium	mg/Kg DB	0.5	NT	NT	NT	NT	NT	NT
Copper	mg/Kg DB	1	NT	NT	NT	NT	NT	NT
Beryllium	mg/Kg DB	0.1	NT	NT	NT	NT	NT	NT
Nickel	mg/Kg DB	2	NT	NT	NT	NT	NT	NT
Cadmium	mg/Kg DB	0.5	NT	NT	NT	NT	NT	NT
Chromium	mg/Kg DB	1	NT	NT	NT	NT	NT	NT
Zinc	mg/Kg DB	1	NT	NT	NT	NT	NT	NT
VOLATILE COMPOUNDS								
Methylene Chloride	µg/Kg DB	2	8	3	6	6	ND	ND
Acetone	µg/Kg DB	8	71	61	ND	ND	ND	ND
Toluene	µg/Kg DB	2	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/Kg DB	2	ND	ND	ND	ND	ND	ND
Total Xylenes	µg/Kg DB	2	ND	ND	ND	ND	ND	ND
TIC Total	µg/Kg DB	--	ND	ND	ND	ND	42000	24000
SEMIVOLATILE COMPOUNDS								
Naphthalene	µg/Kg DB	76	ND	ND	ND	ND	300	ND
2-Methylnaphthalene	µg/Kg DB	38	ND	ND	ND	ND	820	110
Acenaphthene	µg/Kg DB	38	ND	ND	ND	ND	ND	ND
Dibenzofuran	µg/Kg DB	38	ND	ND	ND	ND	17(J)	ND
Fluorene	µg/Kg DB	38	ND	ND	ND	ND	43	ND
Phenanthrene	µg/Kg DB	38	ND	ND	ND	ND	ND	ND
Anthracene	µg/Kg DB	38	ND	ND	ND	ND	ND	ND
Di-n-butyl phthalate	µg/Kg DB	38	ND	ND	ND	ND	15(J)	ND
Fluoranthene	µg/Kg DB	38	ND	ND	ND	ND	ND	ND
Pyrene	µg/Kg DB	38	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	µg/Kg DB	38	ND	ND	ND	ND	ND	ND
Chrysene	µg/Kg DB	38	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	µg/Kg DB	38	56(B)	50(B)	34(J,H,CC)	40(H,CC)	24(J,CC)	22(J,CC)
Benzo(b)fluoranthene	µg/Kg DB	76	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	µg/Kg DB	76	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	µg/Kg DB	76	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-c,d)pyrene	µg/Kg DB	76	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	µg/Kg DB	76	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	µg/Kg DB	76	ND	ND	ND	ND	ND	ND
Diethyl phthalate	µg/Kg DB	38	ND	ND	ND	ND	ND	ND
Dimethyl phthalate	µg/Kg DB	38	ND	ND	ND	ND	ND	14(J)
4-Methylphenol	µg/Kg DB	38	ND	ND	ND	ND	ND	ND
Phenol	µg/Kg DB	38	ND	ND	ND	ND	ND	ND
Di-n-octyl phthalate	µg/Kg DB	38	ND	ND	ND	ND	ND	ND
TIC Total	µg/Kg DB	--	5800	6600	6400	7400	28000	11000

TABLE F-4. RESULTS OF REPLICATED GROUNDWATER SAMPLE ANALYSES FOR SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Parameter	Units	Lower Limit of Detection	MW1-4	MW1-4 DUP	MW1-4 DUP/RE	GW1-4	GW1-4 DUP	GW1-10	GW1-10 DUP
Associated Field QC Samples			EB-12 TB-7 FB-2	EB-12 TB-7 FB-2	EB-12 TB-7 FB-2	EB-15 TB-9 FB-3	EB-15 TB-9 FB-3	EB-15 TB-9 FB-3	EB-15 TB-9 FB-3
PETROLEUM HYDROCARBONS	mg/L	0.5	3.3(H)	2.3(H)	NT	1.3	2.2	ND	ND
DISSOLVED METALS					NT				
Dissolved Arsenic	µg/L	5	ND	ND		ND	ND	ND	ND
Dissolved Lead	µg/L	1	3.2	2.1		1.1	0.8(J)	ND	ND
Dissolved Selenium	µg/L	5	NT	NT		NT	NT	NT	NT
Dissolved Copper	µg/L	1	NT	NT		NT	NT	NT	NT
Dissolved Nickel	µg/L	2	NT	NT		NT	NT	NT	NT
Dissolved Cadmium	µg/L	1	NT	NT		NT	NT	NT	NT
Dissolved Chromium	µg/L	1	NT	NT		NT	NT	NT	NT
Dissolved Zinc	µg/L	1	NT	NT		NT	NT	NT	NT
VOLATILE COMPOUNDS					NT			ND	
Total Xylenes	µg/L	1	22	52		37(EB)	2(EB)		ND
Ethylbenzene	µg/L	1	ND	ND		ND	ND		ND
Methylene Chloride	µg/L	1	ND	ND		ND	ND		ND
Toluene	µg/L	1	ND	ND		ND	ND		ND
Acetone	µg/L	5	ND	ND		6(EB,TB)	6(EB,TB)		ND
Benzene	µg/L	1	ND	ND		ND	ND		ND
TIC Total	µg/L	--	630	NT		910	460		8
SEMIVOLATILE COMPOUNDS					NT			ND	
Bis(2-ethylhexyl)phthalate	µg/L	2	27(CC)		17(B,EH)	17	14		3
Naphthalene	µg/L	4	20		14(EH)	18	18		ND
2-Methylnaphthalene	µg/L	2	6		4(EH)	5	5		ND
Acenaphthene	µg/L	2	2		2(EH)	2	2		ND
Dibenzofuran	µg/L	2	1(J)		1(J,EH)	ND	ND		ND
Fluorene	µg/L	2	2		2(EH)	2	2		ND
Phenanthrene	µg/L	2	2		ND	ND	ND		ND
Anthracene	µg/L	2	ND		ND	ND	ND		ND
Fluoranthene	µg/L	2	4		3(EH)	4	3		ND
Pyrene	µg/L	2	4		3(EH)	4	3		ND
Benzo(a)anthracene	µg/L	2	ND		ND	2	ND		ND
Chrysene	µg/L	2	ND		ND	2	ND		ND
Benzo(b)fluoranthene	µg/L	4	ND		ND	ND	ND		ND
Benzo(k)fluoranthene	µg/L	4	ND		ND	ND	ND		ND
Benzo(a)pyrene	µg/L	4	ND		ND	ND	ND		ND
Indeno(1,2,3-c,d)pyrene	µg/L	4	ND		ND	ND	ND		ND
2,4-Dimethylphenol	µg/L	2	ND		5(EH)	ND	ND		ND
Di-n-butyl phthalate	µg/L	2	ND		ND	ND	ND		ND
Di-n-octyl phthalate	µg/L	2	ND		ND	ND	ND		ND
Diethyl phthalate	µg/L	2	ND		ND	ND	ND		ND
TIC Total	µg/L	--	920		710	800	820		ND

TABLE F-4. RESULTS OF REPLICATED GROUNDWATER SAMPLE ANALYSES FOR SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

Parameter	Units	Lower Limit of Detection	MW1-12	MW1-12 DIL	MW1-12 DUP	MW1-12 DUP/RE	MW3-2	MW3-2 RE	MW3-2 DUP	MW3-2 DUP/RE
Associated Field QC Samples			EB-12 TB-7 FB-2	EB-12 TB-7 FB-2	EB-12 TB-7 FB-2	EB-12 TB-7 FB-2	EB-13 TB-8 FB-2	EB-13 TB-8 FB-2	EB-13 TB-8 FB-2	EB-13 TB-8 FB-2
PETROLEUM HYDROCARBONS	mg/L	0.5	2.2(H)	NT	2.0	NT	ND	NT	ND	NT
DISSOLVED METALS				NT		NT		NT		NT
Dissolved Arsenic	µg/L	5	5		6		ND		ND	
Dissolved Lead	µg/L	1	2.1		2.2		5.2(FB)		4.0(FB)	
Dissolved Selenium	µg/L	5	NT		NT		ND		ND	
Dissolved Copper	µg/L	1	NT		NT		5		5	
Dissolved Nickel	µg/L	2	NT		NT		15		14	
Dissolved Cadmium	µg/L	1	NT		NT		ND		1	
Dissolved Chromium	µg/L	1	NT		NT		3		3	
Dissolved Zinc	µg/L	1	NT		NT		24(EB,FB)		22(EB,FB)	
VOLATILE COMPOUNDS						NT		NT	ND	NT
Total Xylenes	µg/L	1	840(CC)	1100(D,CC)	220(CC)		ND			
Ethylbenzene	µg/L	1	170	160(D)	32		ND			
Methylene Chloride	µg/L	1	ND	ND	ND		ND			
Toluene	µg/L	1	ND	ND	ND		ND			
Acetone	µg/L	5	ND	ND	ND		ND			
Benzene	µg/L	1	ND	ND	ND		ND			
TIC Total	µg/L	--	1800	NT	660		9			
SEMIVOLATILE COMPOUNDS				NT	NT					
Bis(2-ethylhexyl)phthalate	µg/L	2	35			19(B,EH)	5	3(B,EH)	3	2(B,EH)
Naphthalene	µg/L	4	84			72(EH)	ND	ND	ND	ND
2-Methylnaphthalene	µg/L	2	48			46(EH)	ND	ND	ND	ND
Acenaphthene	µg/L	2	ND			ND	ND	ND	ND	ND
Dibenzofuran	µg/L	2	ND			1(J,EH)	ND	ND	ND	ND
Fluorene	µg/L	2	1(J)			1(J,EH)	ND	ND	ND	ND
Phenanthrene	µg/L	2	ND			ND	ND	ND	ND	ND
Anthracene	µg/L	2	ND			ND	ND	ND	ND	ND
Fluoranthene	µg/L	2	ND			ND	ND	ND	ND	ND
Pyrene	µg/L	2	ND			ND	ND	ND	ND	ND
Benzo(a)anthracene	µg/L	2	ND			ND	ND	ND	ND	ND
Chrysene	µg/L	2	ND			ND	ND	ND	ND	ND
Benzo(b)fluoranthene	µg/L	4	ND			ND	ND	ND	ND	ND
Benzo(k)fluoranthene	µg/L	4	ND			ND	ND	ND	ND	ND
Benzo(a)pyrene	µg/L	4	ND			ND	ND	ND	ND	ND
Indeno(1,2,3-c,d)pyrene	µg/L	4	ND			ND	ND	ND	ND	ND
2,4-Dimethylphenol	µg/L	2	ND			ND	ND	ND	ND	ND
Di-n-butyl phthalate	µg/L	2	ND			ND	ND	ND	ND	ND
Di-n-octyl phthalate	µg/L	2	ND			ND	ND	ND	ND	ND
Diethyl phthalate	µg/L	2	ND			ND	ND	ND	ND	ND
TIC Total	µg/L	--	1700			1400	ND	ND	ND	10

F.2.2 Laboratory Analysis for Soil

F.2.2.1 Summary of Procedures and Equipment

The following is a list of the procedures used to analyze the soil samples collected at Base. Table F-5 and F-6 list the analytical methods, detection limits, and the total number of soil samples collected during the RI.

- **Trace Metals** — All soil samples were analyzed for priority pollutant metals using the EPA document, *Test Methods For Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition. Antimony (SW3005/7041), arsenic (SW3050/7061), lead (SW3050/7421), selenium (SW3050/7741), and thallium (SW3050/7841) were analyzed using GFAA; mercury (SW7471) was analyzed by cold vapor generation; and the remainder of the metals (i.e., beryllium, copper, cadmium, chromium, nickel, silver, and zinc) were analyzed by ICAP spectroscopy (SW3050/6010).
- **Volatile Organic Compounds** — All soil samples were analyzed for VOCs using EPA Method 8240, described in SW-846, Third Edition. Using this method, a 5-gram sample is purged directly in a specially designed sparger and then analyzed using gas chromatography/mass spectrometry (GC/MS). Surrogate and internal standard compounds are added to the sample immediately before purging. Compounds are identified by comparing the ion chromatograms of the suspected analytes with the ion chromatograms of 8240 target compounds contained in the mass spectrometer data system.
- **Semivolatile Organic Compounds** — All soil samples were analyzed for SVOCs using EPA Method 8270, described in SW-846, Third Edition. Using this method, a 30-gram soil sample is extracted with methylene chloride and acetone by sonication. Radiolabeled surrogate compounds are added to the sample before extraction. After the extraction is completed, the solvent is concentrated to a final volume of 1.0 milliliter (mL). Compounds used for quantitation of target compounds (i.e., internal standards) are added to the sample extract before instrumental analysis. Target compounds are identified in the same manner as described for VOCs.
- **Total Petroleum Hydrocarbons and Total Organic Carbon** — All soil samples to be evaluated for TPH were extracted using Method SW3550 and analyzed using Method E418.1. All soil samples were analyzed for total organic carbon (TOC) using an internal laboratory method adapted from the guidelines in *Recommended Protocols for Measuring Conventional Sediment Variables in Puget Sound*, August 1986.

F.2.2.2 Level C Data Validation and Quality Assurance Review Results

This subsection summarizes significant findings of the Level C QA review of the data resulting from the analysis of the soil samples collected at SDANG. This summary discusses the following analytical criteria where applicable: holding time requirements, calibration, method-required blanks (e.g., preparation blanks, reagent blanks), surrogate and matrix spike/matrix spike duplicate (MS/MSD) recoveries, instrument tuning, and results of laboratory control sample (LCS) analyses. Required holding times and container types and preservatives for each analyte are given in Table F-7.

TABLE F-5. ANALYTICAL METHODS, DETECTION LIMITS, AND TOTAL NUMBER OF SOIL SAMPLES AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Parameter	Analytical Method	Detection Limit	Reporting Units	Number of Analyses	Trip Blanks	Field Blanks	Equipment Blanks	Replicates	Total Analyses
Petroleum Hydrocarbons	SW 3550/ E 418.1	20	mg/Kg	45	NA	1	10	6	62
Priority Pollutant Metals Screen	SW 3050/ 6010	*	mg/Kg	21	NA	1	3	3	28
Arsenic	SW 3050/ 7060	0.5	mg/Kg	45	NA	1	10	6	62
Antimony	SW 3005/ 7041	2.5	mg/Kg	21	NA	1	3	3	28
Lead	SW 3050/ 7421	0.5	mg/Kg	45	NA	1	10	6	62
Mercury	SW 7471	0.1	mg/Kg	21	NA	1	3	3	28
Selenium	SW 3050/ 7740	0.5	mg/Kg	21	NA	1	3	3	28
Thallium	SW 3050/ 7841	0.5	mg/Kg	21	NA	1	3	3	28
Volatile Organic Compounds (VOCs)	SW 8240	*	µg/Kg	45	6	1	10	6	68
Semivolatile Organic Compounds (SVOCs)	SW 3550/ 8270	*	µg/Kg	45	NA	1	10	6	62

TABLE F-6. CRDLs FOR SOIL SAMPLES AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Parameter	CRDL	Units
INORGANICS		
Antimony	2.5	mg/Kg DB
Arsenic	0.5	mg/Kg DB
Beryllium	0.1	mg/Kg DB
Cadmium	0.5	mg/Kg DB
Chromium	1	mg/Kg DB
Copper	1	mg/Kg DB
Lead	0.5	mg/Kg DB
Mercury	0.1	mg/Kg DB
Nickel	2	mg/Kg DB
Selenium	0.5	mg/Kg DB
Silver	0.6	mg/Kg DB
Thallium	0.5	mg/Kg DB
Zinc	1	mg/Kg DB
TPH OIL & GREASE	20	mg/Kg DB
TOTAL ORGANIC CARBON	0.1	% DB
VOLATILE ORGANICS (BY GC/MS)		
Acetone	10	µg/Kg DB
Benzene	2	µg/Kg DB
Bromodichloromethane	2	µg/Kg DB
Bromoform	2	µg/Kg DB
Bromomethane	2	µg/Kg DB
2-Butanone	6	µg/Kg DB
Carbon Disulfide	2	µg/Kg DB
Carbon Tetrachloride	2	µg/Kg DB
Chlorobenzene	6	µg/Kg DB
Chloroethane	6	µg/Kg DB
Chloroform	2	µg/Kg DB
Chloromethane	2	µg/Kg DB
cis-1,3-Dichloropropene	6	µg/Kg DB
Dibromochloromethane	6	µg/Kg DB
1,1-Dichloroethene	2	µg/Kg DB
1,1-Dichloroethane	2	µg/Kg DB
1,2-Dichloroethane	2	µg/Kg DB
1,2-Dichloroethene (total)	2	µg/Kg DB
1,2-Dichloropropane	2	µg/Kg DB
Ethylbenzene	2	µg/Kg DB
2-Hexanone	6	µg/Kg DB
Methylene Chloride	2	µg/Kg DB
4-Methyl-2-Pentanone	6	µg/Kg DB
Styrene	2	µg/Kg DB
1,1,2,2-Tetrachloroethane	6	µg/Kg DB
Tetrachloroethene	2	µg/Kg DB
Toluene	2	µg/Kg DB
Total Xylenes	2	µg/Kg DB
trans-1,3-Dichloropropene	6	µg/Kg DB
Trichloroethene	2	µg/Kg DB
1,1,1-Trichloroethane	2	µg/Kg DB
1,1,2-Trichloroethane	2	µg/Kg DB
Vinyl Acetate	2	µg/Kg DB
Vinyl Chloride	2	µg/Kg DB
SEMI-VOLATILES (BY GC/MS)		
Acenaphthene	33	µg/Kg DB
Acenaphthylene	33	µg/Kg DB
Anthracene	33	µg/Kg DB
Benzoic Acid	830	µg/Kg DB
Benzo(a)anthracene	33	µg/Kg DB
Benzo(a)pyrene	67	µg/Kg DB
Benzo(b)flouranthene	67	µg/Kg DB
Benzo(g,h,i)perylene	67	µg/Kg DB
Benzo(k)flouranthene	67	µg/Kg DB
Benzyl alcohol	33	µg/Kg DB
Bis(2-chloroethoxy)methane	33	µg/Kg DB
Bis(2-chloroethyl)ether	33	µg/Kg DB
Bis(2-chloroisopropyl)ether	33	µg/Kg DB
Bis(2-ethylhexyl)phthalate	33	µg/Kg DB
4-Bromophenyl-phenylether	67	µg/Kg DB
Butylbenzyl phthalate	33	µg/Kg DB
4-Chloroaniline	33	µg/Kg DB
4-Chloro-3-methylphenol	67	µg/Kg DB
2-Chloronapthalene	33	µg/Kg DB
2-Chlorophenol	33	µg/Kg DB
4-Chlorophenyl-phenylether	33	µg/Kg DB
Chrysene	33	µg/Kg DB
Dibenzofuran	33	µg/Kg DB
Dibenzo(a,h)anthracene	67	µg/Kg DB
1,2-Dichlorobenzene	33	µg/Kg DB
1,3-Dichlorobenzene	33	µg/Kg DB
1,4-Dichlorobenzene	33	µg/Kg DB
3,3'-Dichlorobenzidine	330	µg/Kg DB
2,4-Dichorophenol	67	µg/Kg DB
Diethyl phthalate	33	µg/Kg DB
2,4-Dimethylphenol	33	µg/Kg DB
Dimethyl phthalate	33	µg/Kg DB
Di-n-butyl phthalate	33	µg/Kg DB
4,6-Dinitro-2-Methylphenol	330	µg/Kg DB
2,4-Dinitrophenol	330	µg/Kg DB
2,4-Dinitrotoluene	67	µg/Kg DB
2,6-Dinitrotoluene	67	µg/Kg DB
Di-n-octyl phthalate	33	µg/Kg DB
Flouranthene	33	µg/Kg DB
Flourene	33	µg/Kg DB
Hexachlorobenzene	67	µg/Kg DB
Hexachlorobutadiene	33	µg/Kg DB
Hexachlorocyclopentadiene	67	µg/Kg DB
Hexachloroethane	67	µg/Kg DB
Indeno(1,2,3-cd)pyrene	67	µg/Kg DB
Isophorone	33	µg/Kg DB
2-Methylnapthalene	33	µg/Kg DB
2-Methylphenol	33	µg/Kg DB
4-Methylphenol	33	µg/Kg DB
Napthalene	67	µg/Kg DB
2-Nitroaniline	67	µg/Kg DB
3-Nitroaniline	170	µg/Kg DB
4-Nitroaniline	67	µg/Kg DB
Nitrobenzene	33	µg/Kg DB
2-Nitrophenol	67	µg/Kg DB
4-Nitrophenol	330	µg/Kg DB
N-Nitrosodiphenylamine(1)	33	µg/Kg DB
N-Nitroso-di-n-propylamine	33	µg/Kg DB
Pentachlorophenol	330	µg/Kg DB
Phenanthrene	33	µg/Kg DB
Phenol	33	µg/Kg DB
Pyrene	33	µg/Kg DB
1,2,4-Trichlorobenzene	33	µg/Kg DB
2,4,5-Trichlorophenol	67	µg/Kg DB
2,4,6-Trichlorophenol	67	µg/Kg DB

(1) Cannot be separated from Diphenylamine

TABLE F-7. SAMPLE CONTAINERS, PRESERVATION TECHNIQUES AND HOLDING TIMES OF SOIL SAMPLES ACCORDING TO MEASUREMENT AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Measurement	Container Type	Preservative	Holding Time
ORGANICS			
Purgeable Organics	8 oz. widemouth glass jar*	4° C	14 days
Extractable Organics	16 oz. widemouth glass jar*	4° C	14 days extraction, 40 days analysis
Total Petroleum Hydrocarbons	8 oz. widemouth glass jar*	4° C	14 days
INORGANICS			
Total Metals	16 oz. widemouth glass jar*	4° C	6 months
Arsenic, Lead, Selenium	16 oz. widemouth glass jar*	4° C	6 months
Mercury	16 oz. widemouth glass jar*	4° C	30 days
MISCELLANEOUS INORGANICS			
Total Organic Carbon	One 1.0L plastic bottle	H_2SO_4 to pH <2	28 days

*Teflon®-lined black phenolic screw-top cap

- **Trace Metals** — A summary of the quality control checks for metals in soils, which were performed by the analytical laboratory, is provided in Table F-8. All soil samples were analyzed within the contract-required holding times for trace metals (6 months) and mercury (28 days for water samples). All percent recoveries calculated from the initial and continuing calibration verification (ICV and CCV, respectively) analyses were within the contract-required control limits for trace metals (90 to 110 percent) and mercury (80 to 120 percent), except for selenium (84 percent for both ICV and CCV analyses). The percent recovery for this element in a third CCV analysis was 91. All other QC checks for selenium were within control, including the LCS and MS/MSD analyses; therefore, quantitation of this priority pollutant metal is not considered to have been significantly affected by the initial and continuing calibration results. No interferents were detected in any method-required blank analyses. One ICAP interference check sample (ICS) analysis was conducted. All percent recoveries were within the control limits (80 to 120 percent) for the initial analysis. All percent recoveries were within the control limits for the final analysis except for silver (123 percent). Since the recovery of this element is only slightly outside the control limit, this result is not considered to have significantly affected the quantitation of silver detected in any samples. All percent recoveries and RPDs calculated from the four MS/MSD analyses conducted were within the contract-required control limits except the following: the RPD for selenium in B3-5-2.5 was 24 percent (14 percent); the percent recovery for lead in BK3-20 was 138 percent (131 percent); the recoveries of beryllium was greater than the upper control limit (104 percent) in soil samples MW-1-6-20 (121 and 120 percent) and BK3-20 (119 and 117 percent); and the recovery of cadmium (126 percent) was greater than the upper control limit (124 percent) in MW-1-6-20. In the soil samples where selenium, lead, beryllium, and cadmium were not detected, the QC results are not considered to have a significant impact since the percent recovery or RPD values for these elements are greater than the applicable upper control limits. In the soil samples where selenium, lead, and beryllium were detected, the percent recovery results indicate that the concentrations reported may be higher than actually existence in the environment. Since the percent recoveries reported were only slightly greater than the upper control limit, however, these results were considered to have little impact on the sample concentrations reported. Three LCS analyses were conducted. The percent recovery of chromium (69.8 percent) was less than the lower control limit (79.5 percent) set by the EPA for solid samples. All other percent recoveries were within the control limits. One ICS (initial and final) and one GFAA contract-required detection limit (CRDL) verification standard were analyzed. Although the EPA has not established control limits for this QC check analysis, any positive recovery greater than zero is considered acceptable. The lowest percent recovery reported from the CRDL analyses is 74 percent for nickel.
- **Volatile Organic Compounds** — Summaries of the quality control checks for volatile organic compounds in soil samples are given in Tables F-9 and F-10. All soil samples were analyzed within the contract-required holding time (14 days). All initial and continuing calibration and tuning and mass calibration criteria were met for each GC/MS unit used. No target analytes were detected in the method blanks analyzed before the analysis of the soil samples. All surrogate recoveries were within the contract-required control limits (81 to 117 percent) except that of d_8-toluene (57 percent) in BK-2-20. The recovery (58 percent) of this surrogate was less than the lower control limit in the BK-2-20 reanalysis, thereby documenting matrix interference as required by the EPA CLP. All percent recoveries and RPD values calculated from the MS/MSD analyses of four soil samples (BK2-25, MW-1-7-20, B3-2-0, and MW-1-10) were within the control limits set for laboratory accuracy and precision.
- **Semivolatile Organic Compounds** — Tables F-11 and F-12 present the results of the laboratory quality control data for semivolatile organic compounds in soils. Three soil samples (B1-1-15, B1-2-15, and B1-2-25) were extracted outside the 7-day contract-required holding time set by the CLP for water samples. No holding time criteria have

TABLE F-8. QUALITY CONTROL SUMMARY: MS/MSD-METALS (SOIL SAMPLES)
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

	Accuracy					Precision				
Parameter(Units)	MS Total No. Analyses	Percent Recovery Ranges	%R Control Limits	%R No.Accept Analyses*	%R No.Unaccept Analyses*	MSD Total No. Analyses	Range RPD	RPD Limits	RPD No.Accept Analyses*	RPD No.Unaccept Analyses*
TRACE METALS										
Beryllium	6	99.4-121.4	65-104	2	4	3	0-3	7	3	0
Cadmium	6	97.0-126.0	59-124	5	1	3	2-7	7	3	0
Chromium	6	102.1-123.6	65-126	6	0	3	1-5	8	3	0
Copper	6	93.8-119.4	67-123	6	0	3	1-3	5	3	0
Lead	1	138.4	60-131	0	1	1	-	6	-	-
Mercury	1	102.5	73-121	1	0	1	-	12	-	-
Nickel	6	97.9-123.8	68-130	6	0	3	1-4	6	3	0
Selenium	2	80-102	57-137	2	0	1	24	14	0	1
Silver	6	90.9-106.7	40-120	6	0	3	2-4	6	3	0
Zinc	6	101.5-125.9	68-126	6	0	3	1-3	5	3	0

*Acceptable and unacceptable are based on control limits only.

TABLE F-9. LABORATORY QUALITY CONTROL SUMMARY: MS/MSD-VOLATILE ORGANIC (SOIL SAMPLES)
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

	Accuracy					Precision				
Parameter(Units)	MS Total No. Analyses	Percent Recovery Ranges	%R Control Limits	No.Accept Analyses*	No.Unaccept Analyses*	MSD Total No. Analyses	Range RPD	RPD Limits	RPD No.Accept Analyses*	RPD No.Unaccept Analyses*
SW Method 8240 Volatile Organics										
Benzene	8	82-123	66-142	8	0	4	3-10	21	4	0
Chlorobenzene	8	79-95	60-133	8	0	4	1-8	21	4	0
1,1-Dichloroethene	8	84-105	59-172	8	0	4	2-9	22	4	0
Toluene	8	87-101	59-139	8	0	4	0-8	21	4	0
Trichloroethene	8	82-93	62-137	8	0	4	3-7	24	4	0

*Acceptable and unacceptable are based on control limits only.

TABLE F-10. LABORATORY QUALITY CONTROL SUMMARY: SURROGATE RECOVERY-VOLATILE ORGANICS (SOIL SAMPLES) AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Parameter (Units)	Total Number Analyses	Percent Recovery Ranges	Percent Recovery Control Limits	No.Accept Analyses*	No.Unaccept Analysis*
SW Method 8240 Volatile Organics					
Bromofluorobenzene	64	80-117	74-121	64	0
1,2-Dichloroethane - d4	64	91-117	70-121	64	0
Toluene - d8	64	57-113	81-117	62	2

*Acceptable and unacceptable are based on control limits only.

TABLE F-11. LABORATORY QUALITY CONTROL SUMMARY: MS/MSD-SEMIVOLATILE ORGANICS (SOIL SAMPLES)
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

	Accuracy					Precision				
Parameter(Units)	MS Total No. Analyses	Percent Recovery Range	%R Control Limits	No.Accept Analyses*	No.Unaccept Analyses*	MSD Total No. Analyses	Range Percent RPD	RPD Limits	RPD No.Accept Analyses*	RPD No.Unaccept Analyses*
SW Method 3550/8270 Extractable Organics										
Acenaphthene	8	72-86	31-137	8	0	4	6-8	19	4	0
4-Chloro-3-meth/lphenol	8	73-85	26-103	8	0	4	3-4	33	4	0
2-Chlorophenol	8	60-73	25-102	8	0	4	3-8	50	4	0
1,4-Dichlorobenzene	8	67-78	28-104	8	0	4	0-11	27	4	0
2,4-Dinitrotoluene	8	63-91	28-89	7	1	4	7-18	47	4	0
4-Nitrophenol	8	58-89	11-114	8	0	4	4-8	50	4	0
N-Nitroso-di-n-propylamine	8	78-90	41-126	8	0	4	0-7	38	4	0
Pentachlorophenol	8	58-68	17-109	8	0	4	2-17	47	4	0
Phenol	8	68-81	26-90	8	0	4	1-7	35	4	0
Pyrene	8	73-101	35-142	8	0	4	4-10	36	4	0
1,2,4-Trichlorobenzene	8	73-80	38-107	8	0	4	1-7	23	4	0

*Acceptable and unacceptable are based on control limits only.

TABLE F-12. LABORATORY QUALITY CONTROL SUMMARY: SURROGATE RECOVERY-SEMIVOLATILE ORGANICS (SOIL SAMPLES) AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Parameter (Units)	Total Number Analyses	Percent Recovery Ranges	Percent Recovery Control Limits	No.Accept Analyses	No.Unaccept Analyses
SW Method 3550/8270 Extractable Organics					
Azobenzene -d10	0	-	-	-	-
2-Bromophenol	58	47-80	-	-	-
2-Fluorobiphenyl	58	60-92	30-115	58	0
2-Fluorophenol	58	57-93	25-121	58	0
Nitrobenzene - d5	58	57-130	23-120	57	1
Phenol - d5	58	57-91	24-113	58	0
p-Terphenyl - d14	58	70-98	18-137	58	0
2,4,6-Tribromophenol	58	57-91	19-122	58	0

*Acceptable and unacceptable are based on control limits only.

been set for extraction and analysis of soil samples for SVOCs; however, these samples were extracted within the 14-day holding time recommended in SW-846, Third Edition and the QA/QC plan for SDANG. Therefore, the holding time requirements for extraction and analysis are considered to have been met. All remaining soil samples were extracted within 7 days and analyzed within 40 days. All GC/MS tuning and mass calibration criteria were met. The following initial and continuing calibration criteria were met: the minimum response factor for system performance check compounds (SPCCs) was greater than or equal to 0.050 in both initial and continuing calibration analyses, the maximum percent relative standard (RSD) deviation for calibration check compounds (CCC) was greater than 30 in initial calibrations, and the maximum percent difference was less than or equal to 25 for continuing calibrations. The percent differences of the following compounds were greater than 25 in one or more continuing calibration analyses: bis-2-chloroisopropylether, 3,3'-dichlorobenzidine, bis-2-ethylhexylphthlate, indeno (1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene. No corrective action was taken, since all SPCC and CCC criteria were met. Five soil method blanks were analyzed. Bis(2-ethylhexyl)phthlate was detected in one blank associated with soil samples from borings at Site 3 – Base Fire Training Area (B3) and monitoring wells at Site 1 – Underground Fuel Storage Area (MIO1) at a concentration of 22 µg/Kg. This compound also was detected in the method blank associated with sample B1-1-25 but at a concentration below the sample detection limit. All concentrations of bis(2-ethylhexyl)phthlate detected in the environmental samples associated with these method blanks are flagged to indicate possible laboratory contamination. All surrogate recoveries were within the contract-required control limits except for d5-nitrobenzene (130 percent) in sample B3-3-2.5. Since only one surrogate was outside the control limit, the sample extraction efficiency is considered to be acceptable. Four MS/MSD analyses were conducted on soil samples B1-1-25, MW-1-12-15, MW-1-6-15DUP, and B3-2-0. All percent recoveries and RPD values were within the CLP-advisory control limits for soils except 2,4-dinitrotoluene in sample MW-1-6-15DUP which at 91 percent, is slightly greater than the advisory limit (89 percent). This result is not considered to impact the validity of the analytical data and is considered to be within the acceptable range of laboratory accuracy and precision.

- **Total Petroleum Hydrocarbons and Total Organic Carbon** — Table F-13 shows the results of the laboratory quality control data for total petroleum hydrocarbons and total organic carbon analyses in soils. No holding time criteria have been established by the EPA for the extraction and analysis of soil samples for TPH and TOC; therefore, no objective judgment of the integrity of the data based on the length of time allowed to elapse between sample collection and analysis for these two parameters can be made. All soil samples were extracted and analyzed for TPH between 36 and 55 days after the collection date. In all cases, all analyses were conducted on the same day the samples were extracted. Preparation times of soil samples to be analyzed for TOC varied from 10 to 29 days after collection, and analysis was conducted 3 to 25 days after extraction. No reportable concentrations of TPH were detected in the method blanks analyzed with the soil samples. Two initial calibration and four continuing calibration verifications were conducted. While there are no contract-required control limits, one TPH recovery (128 percent) could be considered high. The remainder of the verifications (104 to 112 percent) were well within what would normally be considered acceptable control ranges (80 to 120 percent). Four soil samples (B3-3-0DUP, MW-1-5-15, MW-1-13-15, and BK3-20) were used for the MS/MSD analyses. All percent recoveries and two RPD values were greater than the upper control limit (114 and 13 percent, respectively). The recoveries of TPH in four method blank spikes conducted were within the control limits, suggesting that while the analysis was conducted properly, the enhanced spike results and greater-than-desired analytical variability were due either to the native soil matrix or to the sample holding

TABLE F-13. LABORATORY QUALITY CONTROL SUMMARY: MS/MSD-TOC AND TPH (SOIL SAMPLES) AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

	Accuracy					Precision				
Parameter(Units)	MS Total No. Analyses	Percent Recovery Range(s)	%R Control Limits	%R No.Accept Analyses*	%R No.Unaccept Analyses*	MSD Total No. Analyses	Range RPD	RPD Limits	RPD No.Accept Analyses*	RPD No.Unaccept Analyses*
TOC (dry basis)	4	50-100	50-150	4	0	2	0-21	30	2	0
TPH (dry basis)	8	116-159	82-114	0	8	4	1-22	13	2	2

*Acceptable and unacceptable are based on control limits only.

times. Based on these QC results, all soil TPH values should be considered lower estimates. Two initial TOC calibration and three continuing TOC calibration verification analyses were conducted. Using the same arbitrary control limits for percent recovery set for TPH, all percent recoveries were within the 80 to 120 percent control limit. TOC was detected in one initial calibration and three continuing calibration blanks at concentrations varying from 0.1 to 0.3 percent. These results are less than five times the method detection limit (0.1 percent). MS/MSD analyses were conducted on two soil samples (MW-1-7-15 and BK2-25). The percent recoveries (18 and 17 percent) of one MS/MSD (BK2-25) were less than the lower control limit (50 percent). The percent recoveries calculated from the MW-1-7-15 MS/MSD (81 and 100 percent) were within the control limits (50 to 150 percent). Two LCS samples were analyzed in conjunction with the soil samples. The RPD values (21 and 6 percent) calculated from the MS/MSD analyses were within the control limits (30 percent). The percent recoveries (99 and 105 percent) of both analyses were well within the EPA control limits (85 to 115 percent). The LCS analyses are considered to be more indicative of the analytical accuracy than the artificially spiked soils samples.

F.2.3 Laboratory Analysis for Groundwater

F.2.3.1 Summary of Procedures and Equipment

The following subsection briefly summarizes of the protocols and instrumentation used to extract and analyze groundwater and QC field blanks collected at the Base. Tables F-14 and F-15 list the analytical methods, detection limits, and the total number of groundwater samples collected during the RI.

- **Trace Metals** — All groundwater and field QC samples were analyzed using the EPA protocols described in the *Test Method For Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition. Antimony (3005/7041), arsenic (3050/7060), lead (3020/7421), selenium (3050/7740), and thallium (3020/7841) were analyzed using graphite furnace atomic absorption; mercury (7470) was analyzed by cold vapor generation; and the remainder of the metals were analyzed by ICAP spectroscopy (3005/6010).
- **Volatile Organic Compounds** — All groundwater and field QC samples were analyzed for VOCs using the EPA solid waste protocols described in SW-846 Method 8240. A 5-mL sample was purged directly in a specially designed sparger and then analyzed using GC/MS. Surrogate and internal standard compounds were added to the sample immediately before purging. Compounds were identified by comparing the ion chromatograms of the suspected analytes with the ion chromatograms of CLP target compounds contained in the MS data system.
- **Semivolatile Organic Compounds** — All groundwater and field QC samples were analyzed for SVOCs using the EPA solid waste protocols described in SW-846 Method 8270. Using this method, a 1.0-liter groundwater or field QC sample was prepared by liquid-liquid extraction (EPA Method 3510) using a methylene chloride/acetone mixture. Radio-labeled surrogate compounds were added to the sample before extraction. After the extraction was completed, the solvent was concentrated to a final volume of 1.0 mL. Compounds used for quantitation of target compounds (i.e., internal standards) were added to the sample extract before instrumentational analysis. Target compounds were identified in the same manner as described for VOCs.

TABLE F-14. LABORATORY ANALYTICAL METHODS, DETECTION LIMITS AND TOTAL NUMBER OF WATER SAMPLES AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Parameter	Analytical Method	Detection Limit	Reporting Units	Number of Analyses	Trip Blanks	Field Blanks	Equipment Blanks	Replicates	Total Analyses
Petroleum Hydrocarbons	E 418.1	0.5	µg/L	25	NA	2	4	5	36
Priority Pollutant Metals Screen	SW 3005/ 6010	*	µg/L	5	NA	1	2	1	9
Arsenic	SW 3050/ 7060	5	µg/L	25	NA	2	4	5	36
Antimony	SW 3005/ 7041	5	µg/L	5	NA	1	2	2	10
Lead	SW 3020/ 7421	1	µg/L	25	NA	2	4	5	36
Mercury	SW 7470	0.2	µg/L	5	NA	1	2	1	9
Selenium	SW 3050/ 7740	5	µg/L	5	NA	1	2	1	9
Thallium	SW 3020/ 7841	5	µg/L	5	NA	1	2	1	9
Volatile Organic Compounds (VOCs)	SW 8240	*	µg/L	25	3	2	4	5	39
Semivolatile Organic Compounds (SVOCs)	SW 3510/ 8270	*	µg/L	25	NA	2	4	5	36
Water Quality Parameters:									
Common Anions (Sulfate, Chloride, Nitrate	EP 300.0	1 1 0.2	mg/L	2	0	0	0	0	2
Common Cations- Calcium	SW 7140	5	mg/L	2	0	0	0	0	2
Manganese, Iron	SW 6010	1	µg/L	2	0	0	0	0	2
Sodium	SW 7770	5	mg/L	2	0	0	0	0	2
Magnesium	SW 7450	5	mg/L	2	0	0	0	0	2
Total Dissolved Solids	EP 160.1	1	mg/L	2	0	0	0	0	2
Total Suspended Solids	EP 160.2	1	mg/L	2	0	0	0	0	2
Alkalinity (Total, Bicarbonate, Carbonate)	EP 310.1	2	mg/L	2	0	0	0	0	2
pH	SW 9040	NA	Units	2	0	0	0	0	2

TABLE F-15. CRDLs FOR GROUNDWATER SAMPLES AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Parameter	CRDL	Units
INORGANICS		
Dissolved Antimony	5	µg/L
Dissolved Arsenic	5	µg/L
Dissolved Beryllium	1	µg/L
Dissolved Cadmium	1	µg/L
Dissolved Chromium	1	µg/L
Dissolved Copper	1	µg/L
Dissolved Lead	1	µg/L
Total Mercury	0.2	µg/L
Dissolved Nickel	2	µg/L
Dissolved Selenium	5	µg/L
Dissolved Silver	1	µg/L
Dissolved Thallium	5	µg/L
Dissolved Zinc	1	µg/L
TPH OIL & GREASE	0.5	µg/L
VOLATILE ORGANICS (BY GC/MS)		
Acetone	5	µg/L
Benzene	1	µg/L
Bromodichloromethane	1	µg/L
Bromoform	1	µg/L
Bromomethane	1	µg/L
2-Butanone	3	µg/L
Carbon Disulfide	1	µg/L
Carbon Tetrachloride	1	µg/L
Chlorobenzene	3	µg/L
Chloroethane	3	µg/L
Chloroform	1	µg/L
Chloromethane	1	µg/L
cis-1,3-Dichloropropene	3	µg/L
Dibromochloromethane	3	µg/L
1,1-Dichloroethene	1	µg/L
1,1-Dichloroethane	1	µg/L
1,2-Dichloroethane	1	µg/L
1,2-Dichloroethene (total)	1	µg/L
1,2-Dichloropropane	1	µg/L
Ethylbenzene	1	µg/L
2-Hexanone	3	µg/L
Methylene Chloride	1	µg/L
4-Methyl-2-Pentanone	3	µg/L
Styren	1	µg/L
Tetrachloroethene	1	µg/L
1,1,2,2-Tetrachloroethane	3	µg/L
1,1,1-Trichloroethane	1	µg/L
1,1,2-Trichloroethane	1	µg/L
Toluene	1	µg/L
Total Xylenes	1	µg/L
Trans-1,3-dichloropropene	3	µg/L
Trichloroethene	1	µg/L
Vinyl Acetate	1	µg/L
Vinyl Chloride	1	µg/L
SEMI-VOLATILES (BY GC/MS)		
Acenaphthene	2	µg/L
Acenaphthylene	2	µg/L
Anthracene	2	µg/L
Benzoic Acid	50	µg/L
Benzo(a)anthracene	2	µg/L
Benzo(a)pyrene	4	µg/L
Benzo(b)flouranthene	4	µg/L
Benzo(g,h,i)perylene	4	µg/L
Benzo(k)flouranthene	4	µg/L
Benzyl alcohol	2	µg/L
Bis(2-chloroethoxy)methane	2	µg/L
Bis(2-chloroethyl)ether	2	µg/L
Bis(2-chloroisopropyl)ether	2	µg/L
Bis(2-ethylhexyl)phthalate	2	µg/L
4-Bromophenyl phenylether	4	µg/L
Butylbenzyl phthalate	2	µg/L
4-Chloroaniline	2	µg/L
4-Chloro-3-methylphenol	4	µg/L
2-Chloronapthalene	2	µg/L
2-Chlorophenol	2	µg/L
4-Chlorophenyl phenylether	2	µg/L
Chrysene	2	µg/L
Dibenzofuran	2	µg/L
Dibenzo(a,h)anthracene	4	µg/L
1,2-Dichlorobenzene	2	µg/L
1,3-Dichlorobenzene	2	µg/L
1,4-Dichlorobenzene	2	µg/L
3,3'-Dichlorobenzidine	20	µg/L
2,4-Dichorophenol	4	µg/L
Diethyl phthalate	2	µg/L
2,4-Dimethylphenol	2	µg/L
Dimethyl phthalate	2	µg/L
Di-n-butyl phthalate	2	µg/L
4,6-Dinitro-2-Methylphenol	20	µg/L
2,4-Dinitrophenol	20	µg/L
2,4-Dinitrotoluene	4	µg/L
2,6-Dinitrotoluene	4	µg/L
Di-n-octyl phthalate	2	µg/L
Flouranthene	2	µg/L
Flourene	2	µg/L
Hexachlorobenzene	4	µg/L
Hexachlorobutadiene	2	µg/L
Hexachlorocyclopentadiene	4	µg/L
Hexachloroethane	4	µg/L
Indeno(1,2,3-cd)pyrene	4	µg/L
Isophorone	2	µg/L
2-Methylnapthalene	2	µg/L
2-Methylphenol	2	µg/L
4-Methylphenol	2	µg/L
Napthalene	4	µg/L
2-Nitroaniline	4	µg/L
3-Nitroaniline	10	µg/L
4-Nitroaniline	4	µg/L
Nitrobenzene	2	µg/L
2-Nitrophenol	4	µg/L
4-Nitrophenol	20	µg/L
N-Nitrosodiphenylamine(1)	2	µg/L
N-Nitroso-di-n-propylamine	2	µg/L
Pentachlorophenol	20	µg/L
Phenanthrene	2	µg/L
Phenol	2	µg/L
Pyrene	2	µg/L
1,2,4-Trichlorobenzene	2	µg/L
2,4,5-Trichlorophenol	4	µg/L
2,4,6-Trichlorophenol	4	µg/L
OTHER INORGANICS		
Bicarbonate Alkalinity	2	mg/L
Carbonate Alkalinity	2	mg/L
Chloride	1	mg/L
Dissolved Calcium	5	mg/L
Dissolved Iron	5	ug/L
Dissolved Magnesium	5	mg/L
Dissolved Manganese	1	ug/L
Dissolved Sodium	5	mg/L
Nitrate	0.2	mg/L
pH	NA	Units
Sulfate	1	mg/L
Total Alkalinity	2	mg/L
Total Dissolved Solids	1	mg/L
Total Suspended Solids	1	mg/L

- **Total Petroleum Hydrocarbons and Miscellaneous Inorganics** — All groundwater, surface water, and field QC samples were analyzed for TPH using EPA Method 418.1, common anions using EPA Method 300.0 (ion chromatography), total dissolved solids (TDS) using EPA Method 160.1, total suspended solids (TSS) using EPA Method 160.2,and alkalinity using EPA Method 310.1.

F.2.3.2 Quality Assurance Review and Results

Subsection F.1.3.2 summarizes significant findings of the QA review of the data derived from the analysis of groundwater and field QC samples associated with the groundwater samples collected at SDANG. This summary discusses the following analytical criteria where applicable: holding time requirements, calibration, method required blanks (e.g., preparation blanks, reagent blanks), surrogate recoveries, MS/MSD results, instrument tuning, and LCS analyses. The required holding times, along with container types and preservatives for each analytes, are given in Table F-16.

- **Trace Metals** — A summary of the quality control checks for metals in groundwater samples is provided in Table F-17. All contract-required holding times for trace metals (6 months) and mercury (28 days) were met, except for three field QC blank samples (EB-4, EB-5, and FB-1), which were analyzed for mercury as many as 6 days after the contract-required holding time (28 days). FB-1 was digested on day 28, but analyzed on day 30. The holding time recommended for this method does not differentiate between preparation and analysis; therefore, the later holding time for FB-1 was used in this evaluation. All initial and continuing calibration verification criteria were met. Zinc was detected at a concentration of 5 µg/L in one water preparation blank associated with the water samples. No corrective action was implemented on the basis of this blank, since the concentration was exactly equal to five times the CRDL. Had the concentration been greater than five times the CRDL, corrective action procedures would have been initiated. One ICAP ICS analysis was conducted. All percent recoveries were within the control limits (80-120 percent). MS/MSD analyses were conducted on the following samples: EB-1 (arsenic), EB-4 (selenium and mercury), EB-11 (copper, silver, beryllium, nickel, lead, cadmium, chromium, thallium and zinc), FB-2 (antimony), MW-1-1 (iron and manganese), MW-1-3 (lead), MW-1-11 (arsenic), EB-15 (lead), and GW1-1 (arsenic). The percent recovery (15 percent) of silver in EB-11 was less than the lower control limit (77 percent) in one matrix spike analysis. This result was most likely due to this element not having been sufficiently resolubilized after digestion of the matrix spike. Since the percent recovery of silver in the MSD analysis (96 percent) was within the control limit (77-120 percent), the matrix spike recovery is considered to be an anomalous occurrence. The percent recovery of mercury in EB-4 (129 percent) was greater than the upper control limit (123 percent). The percent recoveries of iron in MW-1-1 (1,100 and 1,000 percent) were greater than the upper control limit (138 percent). The antimony RPD value calculated from the MS/MSD analyses of FB-2 (33 percent) was greater than the upper control limit (16 percent) for duplicate analyses; however, the MS/MSD percent recoveries (59 and 83 percent) were within the control limits (40-150 percent). A post-digestion spike analysis was performed, and no matrix interference from the sample was documented; therefore, the cause of variability in the spike analyses is unknown. Because antimony was not detected in the samples submitted and the spike results were acceptable, the RPD result is not considered to have any impact on the analytical data. One spiked sample analysis was conducted. All percent recoveries were within the control limits except for manganese (128 percent),

TABLE F-16. SAMPLE CONTAINERS, PRESERVATION TECHNIQUES, AND HOLDING TIMES OF GROUNDWATER SAMPLES ACCORDING TO MEASUREMENT AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Measurement	Container Type	Preservative	Holding Time
ORGANICS			
Purgeable Organics	Four 40 ml. glass vials*	4° C	14 days
Extractable Organics	Three 1.0L glass bottles*	4° C	7 days extraction, 40 days analysis
Total Petroleum Hydrocarbons	Two 1.0L glass bottles*	H_2SO_4 to pH <2, 4° C	28 days
INORGANICS			
Total Recoverable Metals	One 500 mL plastic bottle	HNO_3 to pH <2	6 months
Arsenic, Lead, Selenium	One 500 mL plastic bottle	HNO_3 to pH <2	6 months
Mercury	One 500 mL plastic bottle	HNO_3 to pH <2	30 days
MISCELLANEOUS INORGANICS			
Common Anions	One 1.0L plastic bottle	H_2SO_4 to pH <2, 4° C	28 days
Total Dissolved Solids	One 1.0L plastic bottle	4° C	7 days
Total Suspended Solids	One 1.0L plastic bottle	4° C	7 days
pH	One 500 mL plastic bottle	4° C	6 hours
Total Alkalinity as $CaCO_3$	One 500 mL plastic bottle	4° C	14 days
Nitrate/Nitrite	One 1.0L plastic bottle	H_2SO_4 to pH <2, 4° C	24 hours

*Teflon®-lined black phenolic screw-top cap

TABLE F-17. LABORATORY QUALITY CONTROL SUMMARY: MS/MSD-METALS (GROUNDWATER SAMPLES)
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

	Accuracy					Precision				
Parameter(Units)	MS Total No. Analyses	Percent Recovery Range(s)	%R Control Limits	%R No.Accept Analyses*	%R No.Unaccept Analyses*	MSD Total No. Analyses	Range RPD	RPD Limits	RPD No.Accept Analyses*	RPD No.Unaccept Analyses*
TRACE METALS										
Antimony	2	59.4-83.2	40-150	2	0	1	33.4	16	0	1
Arsenic	6	87.7-100.0	57-131	6	0	3	0.0-7	7	3	0
Beryllium	2	98.4-107.6	73-116	2	0	1	8.9	29	1	0
Cadmium	2	100-105.4	66-123	2	0	1	5.3	5	0	1
Chromium	2	98.8-100.4	67-127	2	0	1	1.6	6	1	0
Copper	2	99.4-101.6	65-122	2	0	1	2.2	7	1	0
Iron	2	1018.8-1064.8	43-138	0	2	1	4.4	23	1	0
Lead	6	99.2-121.5	66-124	6	0	3	1.1-15	7	2	1
Manganese	2	218.0-256.0	-	-	-	1	16.0	20	1	0
Mercury	2	123.0-129.0	79-123	1	1	1	4.8	5	1	0
Nickel	2	96.2-99.6	66-125	2	0	1	3.5	5	1	0
Selenium	2	107.5-110.0	66-131	2	0	1	2.3	7	1	0
Silver	2	14.8-95.6	77-120	1	1	1	159.6	7	0	1
Thallium	2	90.4-94.4	40-150	2	0	1	4.3	9	1	0
Zinc	2	96.2-97.2	64-127	2	0	1	1.0	6	1	0

*Acceptable and unacceptable are based on control limits only.

which was slightly greater than the upper control limit (117 percent). This result is most likely due to an insufficient concentration of manganese added to the sample, since manganese was detected in the unspiked sample at a concentration of 2,125 µg/L, yet only 100 µg/L was added to the sample. This result is not considered to be significant or to negatively impact the other sample results. Two LCS analyses were conducted. All percent recoveries were within the limits set by the EPA. One ICP (initial and final) and one GFAA CRDL verification standard were analyzed. Although the EPA has not established control limits for this QC check analysis, any positive recovery greater than zero is considered acceptable. The lowest percent recovery reported from the CRDL analyses was 67 percent for chromium, and the highest percent recovery was 610 percent for lead.

- **Volatile Organic Compounds/VOCs** — Summaries of the quality controls checks for volatile organic compounds in groundwater samples are given in Table F-18 and F-19. All groundwater, surface water, and field QC blank samples were analyzed within the 14-day holding time. All GC/MS tuning and mass calibration criteria were met. All initial calibration SPCC and CCC criteria were met. The relative response factors for all compounds were greater than 0.05, and all percent RSD values were less than 30. All continuing calibration SPCC and CCC criteria were met; however, the percent differences of the following compounds were greater than 25 in one or more continuing calibration verification analyses: chloromethane, bromomethane, chloroethane, carbon disulfide, 1,2-dichloroethene, carbon tetrachloride, trichloroethene, xylene, acetone, tetrachloroethane, vinyl acetate, bromodichloromethane, dibromochloromethane, cis-1,3-dichloropropene, bromoform, methyl isopropyl ketone, tetrachloroethene, and styrene. No corrective action was taken since all SPCC and CCC criteria were met. Ten method blanks were analyzed in association with the water samples collected at SDANG. Methylene chloride was detected at a concentration of 1 µg/L in the method blank associated with EB-12, EB-13, EB-14, and FB-2. Methylene chloride was also detected in each of the four field QC blanks at a concentration of 2 µg/L. These results were flagged with a "B" to indicate the method blank results. No corrective action was conducted as a result since the concentration detected in the method blank was less than five times the CRDL. All surrogate recovery criteria were met. All percent recoveries and RPD values calculated from the four MS/MSD analyses were within the control limits for this method.

- **Semivolatile Organic Compounds/SVOCs** — Tables F-20 and F-21 present the results of the laboratory quality control data in groundwater. EB-12, EB-13, EB-14, FB-2, MW-1-1, and MW-1-4 were extracted 8 to 11 days after the date of collection, exceeding the contract-required holding time by 1 to 3 days. All other holding times were met. All tuning and mass calibration criteria were met. All initial calibration SPCC and CCC criteria were met. In addition, the RRF and percent RSD criteria for all target compounds were greater than 0.05 and less than 30 percent, respectively. All continuing calibration SPCC and CCC criteria were met. The percent differences of the following compounds were greater than 25 in one or more continuing calibration analyses: bis(2-chloroisopropyl)ether, 3,3'-dichlorobenzidine, bis(2-ethylhexyl)phthlate, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzyl alcohol, 4-chloroaniline, hexachloropentadiene, n-nitroso-di-n-propylamine, benzoic acid, 4-nitroaniline, hexachlorobutadiene, 2,4,6-tribromophenol, bis(2-chloroethylvinyl)ether, 2,4-dinitrophenol, aniline, and benzo(g,h,i)perylene. No corrective action was taken since all SPCC and CCC criteria were met. Ten method blanks were analyzed. No interferents were detected for except bis(2-ethylhexyl)phthlate (2 µg/L) in the method blank associated with MW-1-10, MW-1-11, and MW-1-12DUP. No corrective action was taken since this concentration is less than the five times the CRDL. Surrogate recoveries in 33 water samples were outside the control limits in the original analysis. All samples were re-analyzed. One or more

TABLE F-18. LABORATORY QUALITY CONTROL SUMMARY: MS/MSD-VOLATILE ORGANIC (GROUNDWATER SAMPLES) AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

	Accuracy					Precision				
Parameter(Units)	MS Total No. Analyses	Percent Recovery Ranges	%R Control Limits	No.Accept Analyses*	No.Unaccept Analyses*	MSD Total No. Analyses	Range RPD	RPD Limits	RPD No.Accept Analyses*	RPD No.Unaccept Analyses*
SW Method 8240 Volatile Organics										
Benzene	8	104-116	76-127	8	0	4	0-3	11	4	0
Chlorobenzene	8	85-111	75-130	8	0	4	1-3	13	4	0
1,1-Dichloroethene	8	88-127	61-145	8	0	4	0-5	14	4	0
Toluene	8	88-111	76-125	8	0	4	0-3	13	4	0
Trichloroethene	8	76-118	71-120	8	0	4	0-5	14	4	0

TABLE F-19. LABORATORY QUALITY CONTROL SUMMARY: SURROGATE RECOVERY-VOLATILE ORGANIC COMPOUNDS (GROUNDWATER SAMPLES) AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Parameter (Units)	Total Number Analyses	Percent Recovery Ranges	Percent Recovery Control Limits	No.Accept Analyses*	No.Unaccept Analysis*
SW Method 8240 Volatile Organics					
Bromofluorobenzene	84	91-114	86-115	84	0
1,2-Dichloroethane - d4	84	84-111	76-114	84	0
Toluene - d8	84	91-110	88-110	84	0

*Acceptable and unacceptable are based on control limits only.

TABLE F-20. LABORATORY QUALITY CONTROL SUMMARY: MS/MSD-SEMIVOLATILE ORGANIC (GROUNDWATER SAMPLES) AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

	Accuracy					Precision				
Parameter(Units)	MS Total No. Analyses	Range Percent Recovery	%R Control Limits	No.Accept Analyses*	No.Unaccept Analyses*	MSD Total No. Analyses	Range Percent RPD	RPD Limits	RPD No.Accept Analyses*	RPD No.Unaccept Analyses*
SW Method 3510/8270 Extractable Organics										
Acenaphthene	8	67-89	46-118	8	0	4	4-9	31	4	0
4-Chloro-3-methylphenol	8	43-85	23-97	8	0	4	3-35	42	4	0
2-Chlorophenol	8	55-89	27-123	8	0	4	1-21	40	4	0
1,4-Dichlorobenzene	8	58-91	36-97	8	0	4	0-11	28	4	0
2,4-Dinitrotoluene	8	64-81	24-96	8	0	4	0-4	38	4	0
4-Nitrophenol	8	26-59	10-80	8	0	4	3-13	50	4	0
N-Nitroso-di-n-propylamine	8	64-98	41-116	8	0	4	0-9	38	4	0
Pentachlorophenol	8	67-78	9-103	8	0	4	1-4	50	4	0
Phenol	8	30-58	12-89	8	0	4	0-9	42	4	0
Pyrene	8	76-109	26-127	8	0	4	2-10	31	4	0
1,2,4-Trichlorobenzene	8	63-97	39-98	8	0	4	2-10	28	4	0

*Acceptable and unacceptable are based on control limits only.

TABLE F-21. LABORATORY QUALITY CONTROL SUMMARY: SURROGATE RECOVERY - SEMIVOLATILE ORGANIC COMPOUNDS (GROUNDWATER SAMPLES) AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Parameter (Units)	Total Number Analyses	Percent Recovery Ranges	Percent Recovery Control Limits	No.Accept Analyses	No.Unaccept Analyses
SW Method 3550/8270 Extractable Organics					
Azobenzene - d10	23	61-86	49-123	23	0
2-Bromophenol	81	1-78	28-119	20	3
2-Fluorobiphenyl	88	51-92	43-116	88	0
2-Fluorophenol	88	0-73	21-100	49	39
Nitrobenzene - d5	88	49-98	35-114	88	0
Phenol - d5	88	0-55	10-94	57	31
p-Terphenyl - d14	88	28-93	33-141	87	1
2,4,6-Tribromophenol	88	2-88	10-123	84	4

*Acceptable and unacceptable are based on control limits only.

surrogate recoveries remained outside the control limits in 18 samples due to matrix interference by CLP definition. MS/MSD analyses were conducted on four water samples. All percent recoveries and RPD values were within the CLP control limits.

- **Total Petroleum Hydrocarbons and Miscellaneous Inorganics** — Table F-22 presents the results of the laboratory quality control data for total petroleum hydrocarbons in groundwater. Fifty-five groundwater, surface water, and field QC blank samples were submitted for TPH analysis. Thirty-six of these samples were extracted and analyzed outside the 28-day holding time. Twelve samples were extracted 5 days after the holding time, 13 samples after 6 days, 2 samples after 8 days, 2 samples after 12 days, 1 sample after 19 days, 4 samples after 21 days, 1 sample after 25 days, and 1 sample after 26 days. In all cases, the samples were analyzed on the same days that they were extracted to minimize any further deterioration due to sample holding considerations. All initial and continuing calibration verification analyses were within control limits. In addition, no interferents were detected in the associated initial and continuing calibration blanks. Four procedural (method) blanks were analyzed in association with the water samples collected at SDANG. TPH was detected in two procedural blanks at concentrations (1.1 and 0.7 mg/L) less than three times the method detection limit. MS/MSD analyses were conducted on five groundwater and field QC blank samples (MW-1-14, MW3-2, FB-2, FB-3, and GW1-11). All percent recoveries and RPD values calculated were within the internal laboratory control limits (74 to 126 percent). Three blank spike analyses were conducted. All recoveries (110 to 117 percent) were within the 75 to 125 percent control limit. Duplicate analyses were conducted on 2 samples, MW-1-14 and FB-2. TPH was undetected in both samples; therefore, a quantitative assessment of analytical precision cannot be made. Qualitatively, laboratory precision appears to be in control with two duplicate nondetectable values. Two groundwater samples (MW-1-1 and MW-1-3) were analyzed for common anions (i.e., nitrate, chloride, and sulfate), total alkalinity, TDS, and TSS. The recommended holding time for TDS and TSS analyses (7 days) was exceeded on MW-1-3 (21 and 16 days. respectively). The recommended holding time (14 days) for alkalinity was also exceed for this sample (28 days). The recommended holding time (28 days for chloride and sulfate analysis and 48 hours for nitrate analysis) for common anion analysis was exceeded for MW-1-1 and MW-1-3 30 days). The sulfate and chloride results are not considered to have been affected by the length of time the samples were held before analysis; however, analyses that are very sensitive to changes in pH and exposure to air will be significantly affected by the length of time these samples are held before analysis. Therefore, all analytical data from the nitrate, alkalinity, and residue analyses should be considered lower estimates. All other QC check analyses (i.e., calibration verification, method blank, matrix spike, duplicate analyses) for residue, common anions, and alkalinity analyses were within control limits.

TABLE F-22. LABORATORY QUALITY CONTROL SUMMARY: MS/MSD-TPH (GROUNDWATER SAMPLES)
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

	Accuracy					Precision				
Parameter(Units)	MS Total No. Analyses	Percent Recovery Range(s)	%R Control Limits	%R No.Accept Analyses*	%R No.Unaccept Analyses*	MSD Total No. Analyses	Range RPD	RPD Limits	RPD No.Accept Analyses*	RPD No.Unaccept Analyses*
TPH	10	89-118	74-126	10	0	5	0-6	11	5	0

*Acceptable and unacceptable are based on control limits only.

DATA QUALIFIERS USED ON TABLES FOR SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Information concerning abbreviations found on data tables can be found here.

* These samples were collected in January and filtered in the field. The units were reported as mg/L rather than µg/L; for the sake of consistency, the units were changed to µg/L. The following detection limits also changed: iron (0.01 mg/L) and manganese (0.001 mg/L). If lead was not detected at the ICP detection limit, then GFAA was used to achieve the lower limit to further analyze the samples.

** These samples were collected unfiltered in January. The following detection limits changed: sodium (0.5 mg/L), calcium (0.5 mg/L), and magnesium (0.5 mg/L).

ND This compound/parameter was not detected at or above the detection level.

NT This compound/parameter was not analyzed in the respective sampling round.

(B) Compound was detected in the associated method blank.

(CC) Continuing calibration verification relative response factor outside control limits.

(D) Dilution analysis. This flag is associated with the (E) flag.

(E) The analysis was performed and the concentration exceeds the calibration range of the gas chromatograph/mass spectrometer. If one or more of the TCL's is above the detection level, the sample or extract must be reanalyzed for all of the appropriate TCL's. If dilution causes results from the first analysis to be below the detection level, both analyses would be reported.

(EB) Compound/parameter was also detected in the associated equipment blank.

(EH) The extraction holding time was exceeded for the respective sample.

(FB) Compound/parameter was also detected in the associated field blank.

(I) The ICP interference check sample percent recovery exceeded the control limits in this instance.

(H) The CLP holding time was exceeded for this compound/element.

(IC) The initial calibration verification relative response factor was outside the normal control limits.

(J) Estimated value. This flag is used when the mass spectral data indicates the presence of an analyte but the result is below the sample quantitation level.

(JB) Indicates that the compound/element was detected in the associated method blank but was at a quantitation level below the normal detection level. This is also an estimation of the true result.

(JX) A combination of (J) and (X), the compound/element in question coeluted but at a level lower than the minimum level of detection.

(MD) MS/MSD RPD was outside the established control limits for this analyte.

(RE) Laboratory re-extractions were performed when questionable results need further justification.

(S) The surrogate recovery was below the minimum control limits.

(T) The analyte in question was found to coelute from the gas chromatographic column with a similar analyte also noted. The instrument was not able to effectively separate these two constituents and normally reflects a similar, if not equal, level of contamination.

(TB) Compound or element also detected in the associated trip blank.

(U) Indicates the compound was analyzed but not detected.

(X) Same as (T) but was used in a different round of analysis with similar results.

MWx-y Site x at Monitoring well y (groundwater sample collected in May).

GWx-y Site x at Monitoring well y (groundwater sample collected in Jan/Jul).

SW-x Surface water sample collected at Location x.

MWx-y-z Site x at Monitoring well y and Depth z(feet) (soil sample).

Bx-y-z Site x at Soil boring y and Depth z(feet) (background soil sample).

BKx-y Background soil sample.

FB-x Field blank.

EB-x Equipment blank.

TB-x Trip blank.

QA-x Quality assurance samples.

QA/QC PROGRAM CHEMICAL ANALYSES

TABLE F-23. SITE 1 - UNDERGROUND FUEL STORAGE AREA WATER QUALITY PARAMETERS FOR SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Parameter	Units	Lower Limit of Detection	GW1-1	MW1-1	GW1-1	GW1-3	MW1-3	GW1-4	GW1-4
TRACE METALS									
Dissolved Iron	µg/L	5	86*	37	NT	NT	5600	NT	130*
Dissolved Manganese	µg/L	1	90*	2100	NT	NT	2000	NT	17*
Dissolved Sodium	mg/L	5	7.3**	12	NT	NT	21	NT	17**
Dissolved Calcium	mg/L	5	120**	83	NT	NT	160	NT	150**
Dissolved Magnesium	mg/L	5	27**	17	NT	NT	32	NT	35**
MISCELLANEOUS INORGANICS									
Sulfate	mg/L	1	57	59	NT	NT	110(H)	NT	99
Chloride	mg/L	1	14	15(H)	NT	NT	34(H)	NT	28
Nitrate	mg/L	0.2	11	0.3(H)	NT	NT	ND	NT	0.2(U)
Total Dissolved Solids	mg/L	1	520(B)	460	NT	NT	670	NT	700(B)
Total Suspended Solids	mg/L	1	140	52	NT	NT	340	NT	92
Total Alkalinity	mg/L	2	310	420(H)	NT	NT	420	NT	450
Bicarbonate Alkalinity	mg/L	2	310	420(H)	NT	NT	420(H)	NT	450
Carbonate Alkalinity	mg/L	2	2(U)	0	NT	NT	0	NT	2(U)
pH	Units	N/A	6.3	6.9(H)	NT	NT	6.9(H)	NT	7.0

TABLE F-24. LABORATORY QUALITY CONTROL CHECK SAMPLE SUMMARY FOR METALS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Parameter	Method Number	Holding Time (days)	Initial Calibration Verification	Continuing Calibration Verification	BLANKS Initial	BLANKS Continuing	BLANKS Procedural
TRACE METALS (ICP) Beryllium Cadmium Chromium Copper Nickel Arsenic Zinc	SW 3005/3050/6010	6 Months (preserved pH<2)	Instruments must be calibrated daily and each time the instrument is set up. A blank and at least one standard must be used in establishing the analytical curve.	ICV and CCV: Analysis results must fall within the control limits of 90-110 %R of the true value.	Criteria: No contaminants should be found in the blanks.		
TRACE METALS (GFAA) Antimony Arsenic Lead Selenium Thallium	 SW 3005/7041 SW 3050/7060 SW 3020/3050/7421 SW 3050/7740 SW 3020/3050/7841	6 Months (preserved pH<2)	A blank and at least three standards, one of which must = CRDL, must be used in establishing the analytical curve; also, the correlation coefficient must be >= 0.995. The instrument must be calibrated daily and each time it is set up.	ICV and CCV: Analysis results must fall within the control limits of 90-110 %R of the true value.	Criteria: No contaminants should be found in the blanks.		
TRACE METALS (CV) Mercury	 SW 7470/7471	28 Days (preserved pH<2)	A blank and at least four standards, must be used in establishing the analytical curve; also, a correlation coefficient must be >=0.995.	ICV and CCV: Analysis results must fall within the control limits of 80-120 %R of the true value.	Criteria: No contaminants should be found in the blanks.		

TABLE F-24. LABORATORY QUALITY CONTROL CHECK SAMPLE SUMMARY FOR METALS AT
SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

Parameter	Laboratory Control Sample	ACCURACY MS/MSD (%R)	ACCURACY MS/MSD (RPD)	ICP Interference Check Sample	CRDL Standard for AA and ICP	PRECISION Duplicate Analysis
TRACE METALS (ICP) Beryllium Cadmium Chromium Copper Nickel Arsenic Zinc	TRACE METALS CONTROL LIMITS: WATERS 80-120%R SOILS (%R) Ag 24.6-53.5 As 635.0-1199.0 Be 16.5-22.3 Cd 35.7-55.1 Cr 79.2-120.0 Hg 8.5-17.0 Ni 49.2-72.6 Pb 188.0-285.0 Sb 127.0-294.0 Se 80.0-120.0 Tl 24.6-53.5 Zn 138.0-236.0	Criteria: 1. Samples used as field blanks cannot be used for spiked sample analysis. 2. Spike %R must be within 75-125% (Note: Spike recovery limits do not apply when the sample concentration exceeds the spike concentration by a factor of 4 or more.)	TRACE METALS RPD CONTROL LIMITS: WATER / SOIL Ag 7 / 6 As 5 / --- Be 29 / 7 Cd 5 / 7 Cr 6 / 8 Cu 7 / 5 Fe 23 / --- Hg 5 / 12 Mn 20 / --- Ni 5 / 6 Pb 7 / 6 Sb 16 / --- Se 7 / 14 Tl 9 / --- Zn 6 / 5	An ICS must be run at the beginning and end of each sample analysis run (or twice during an 8 hour working shift, whichever is more frequent	%R must be >0%.	Criteria: 1. Field blanks may not be used. 2. A control limit of + or - 20.0% (35% for soils) for RPD shall be used for sample values >5X CRDL. 3. A control limit of + or - CRDL shall be used for sample values >5X CRDL.
TRACE METALS (GFAA) Antimony Arsenic Lead Selenium Thallium		Criteria: 1. Samples used as field blanks cannot be used for spiked sample analysis. 2. Spike %R must be within 85-115% (Note: Spike recovery limits do not apply when the sample concentration exceeds the spike concentration by a factor of 4 or more.)		Not Applicable	%R must be >0%.	Criteria: 1. Field blanks may not be used. 2. A control limit of + or - 20.0% (35% for soils) for RPD shall be used for sample values >5X CRDL. 3. A control limit of + or - CRDL shall be used for sample values >5X CRDL.
TRACE METALS (CV) Mercury		Criteria: 1. Samples used as field blanks cannot be used for spiked sample analysis. 2. Spike %R must be within 85-115% (Note: Spike recovery limits do not apply when the sample concentration exceeds the spike concentration by a factor of 4 or more.)		Not Applicable	Not Applicable	Criteria: 1. Field blanks may not be used. 2. A control limit of + or - 20.0% (35% for soils) for RPD shall be used for sample values >5X CRDL. 3. A control limit of + or - CRDL shall be used for sample values >5X CRDL.

TABLE F-25. LABORATORY QUALITY CONTROL CHECK SAMPLE SUMMARY FOR ORGANIC COMPOUNDS
AT SOUTH DAKOTA AIR NATIONAL GUARD; JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

Parameter	Method Number	Holding Time (days)	GC/MS Tuning	Initial Calibration Verification
VOLATILE ORGANIC COMPOUND (VOC's)	SW 8240	Criteria: 7-water (unpreserved) 14-water (preserved) 14-soils	Criteria: Bromofluorobenzene (BFB) m/z ION ABUNDANCE CRITERIA 50 15.0-40.0% of the base peak 75 30.0-60.0% of the base peak 95 base peak, 100% relative abundance 96 5.0-9.0% of the base peak 173 less than 2.0% of m/z 174 174 greater than 50.0% of the base peak 175 5.0-9.0% of m/z 174 176 greater than 95.0%, but less than 101.0% of the m/z 174 177 5.0-9.0% of m/z 176	Criteria: 1. Average RRF for TCL compounds must be >=0.05; however, RRF for SPCC compounds must be >0.3 2. All %RSD must be <=30.0%
SEMIVOLATILE ORGANIC COMPOUND (SVOC's)	SW 3510/SW 8270(WATER) SW 3550/SW 8270(SOIL)	Must be preserved at 4 degees C. Water samples must be extracted in 7 days and the extraction must be analyzed in 40 days. Soil samples must be extracted in 14 days and the extract must be analyzed in 40 days.	Criteria: Decafluorotriphenylphosphine (DFTPP) m/z ION ABUNDANCE CRITERIA 51 30.0-60.0 % of m/z 198 68 less than 2.0% of m/z 69 70 less than 2.0% of m/z 69 127 40.0-60.0% of m/z 198 197 less than 1% of m/z 198 198 base peak, 100% relative abundance 199 5.0-9.0% of m/z 198 275 10.0-30.0% of m/z 198 365 greater than 1.00% of m/z 198 441 present, but less than m/z 443 442 greater than 40.0% m/z 198 443 17.0-23.0% of m/z 442	Criteria: 1. Average RRF for TCL compounds must be >=0.05; however, RRF for SPCC compounds must be >0.3 2. All %RSD must be <=30.0%

TABLE F-25. LABORATORY QUALITY CONTROL CHECK SAMPLE SUMMARY FOR ORGANIC COMPOUNDS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

Parameter	Continuing Calibration Verification	Method Blank	ACCURACY Surrogate Recovery	MS/MSD (%R)	PRECISION MS/MSD (RPD)
VOLATILE ORGANIC COMPOUND (VOC's)	Criteria: 1. RRF for TCL compounds must be >=0.05; however, RRF for SPCC compounds must be >0.3 2. All %D must be <=25%	Criteria: No contaminants should be present in the blanks.	Criteria: Sample and blank spike recoveries must be within a 95% confidence interval established through repetitive analysis.	Criteria: Spike recoveries must be within a 95% confidence interval which is established through repetitive analyses.	Criteria: RPD between MS and MSD recoveries must be within a 95% confidence interval established through repetitive analysis.
SEMIVOLATILE ORGANIC COMPOUND (SVOC's)	Criteria: 1. RRF for TCL compounds must be >=0.05; however, RRF for SPCC compounds must be >0.3 2. All %D must be <=25%	Criteria: No contaminants should be present in the blanks.	Criteria: Sample and blank spike recoveries must be within a 95% confidence interval established through repetitive analysis.	Criteria: Spike recoveries must be within a 95% confidence interval which is established through repetitive analyses.	Criteria: RPD between MS and MSD recoveries must be within a 95% confidence interval established through repetitive analysis.

TABLE F-26. LABORATORY QUALITY CONTROL CHECK SAMPLE SUMMARY FOR MISCELLANEOUS INORGANICS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

Parameter	Method Number	Holding Time (days)	Initial Calibration Verification	Continuing Calibration Verification	Method Blank
TPH	SW 3550/EP 418.1	28 Days -Water Samples No holding times cited for soils (28 days was arbitrarily used).	Ensure that a 3-5 point curve bracketing the sample concentration is performed daily.	Not Applicable	Criteria: No contaminants should be found in the blanks.
TOC	LX SB9	28 Days was used which was established on the Job Specific Document.	Not Applicable	Not Applicable	Criteria: No contaminants should be found in the blanks.
MISCELLANEOUS INORGANICS:					
Dissolved Arsenic	LX WM3A/SW 7061	6-Months (Preserved pH<2)	Not Applicable	Not Applicable	Not Applicable
Dissolved Lead	LX WM2/SW 7421	6-Months (Preserved pH<2)			
Dissolved Iron	LX WM1B/SW 6010	6-Months (Preserved pH<2)			
Dissolved Manganese	LX WM1B/SW 6010	6-Months (Preserved pH<2)			
Dissolved Sodium	SW 7770	6-Months (Preserved pH<2)			
Dissolved Calcium	SW 7140	6-Months (Preserved pH<2)			
Dissolved Magnesium	SW 7450	6-Months (Preserved pH<2)			
Sulfate	EP 300.0	28 Days			
Chloride	EP 300.0	28 Days			
Nitrate	EP 300.0	24 Hours			
TDS	EP 160.1	7 Days			
TSS	EP 160.2	7 Days			
Total Alkalinity	EP 310.1	14 Days			
Bicarbonate Alkalinity	EP 310.1	14 Days			
Carbonate Alkalinity	EP 310.1	14 Days			
pH	SW 9040	6 Hours-Determine on Site			

TABLE F-26. LABORATORY QUALITY CONTROL CHECK SAMPLE SUMMARY FOR MISCELLANEOUS INORGANICS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

Parameter	ICP Interference Check Sample	CRDL Standard for AA and ICP	BLANKS Initial	BLANKS Continuing	BLANKS Procedural	Laboratory Control Sample	PRECISION MS/MSD (%R)	Blank Spike
TPH	Not Applicable	Not Applicable	Criteria: No contaminants should be found in the blanks.			Not Applicable	Spike %R must be within 82-114%.	Control Limit %R should be 75-125%
TOC	Not Applicable	Not Applicable	Not Applicable			Control Limit: 3.74-5.06	Spike %R must be within 75-125%.	Not Applicable
MISCELLANEOUS INORGANICS: Dissolved Arsenic, Dissolved Lead, Dissolved Iron, Dissolved Manganese, Dissolved Sodium, Dissolved Calcium, Dissolved Magnesium, Sulfate, Chloride, Nitrate, TDS, TSS, Total Alkalinity, Bicarbonate Alkalinity, Carbonate Alkalinity, pH	An ICS must be run at the beginning and end of each sample analysis run (or twice during an 8 hour shift whichever is more frequent).	%R must be >0% where applicable. (For As, Pb, Fe, Mn, Na, Ca, Mg)	Criteria: No contaminants should be found in the blanks.			Control Limits: As 635.0-1199.0 Pb 188.0-285.0	Criteria: 1. Samples used as field blanks cannot be used for spiked sample analysis. 2. Spike %R must be within 75-125% (Note: Spike recovery limits do not apply when the sample concentration exceeds the spike concentration by a factor of 4 or more.)	Not Applicable

TABLE F-26. LABORATORY QUALITY CONTROL CHECK SAMPLE SUMMARY FOR MISCELLANEOUS INORGANICS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

Parameter	PRECISION MS/MSD (RPD)	Duplicate Analysis
TPH	RPD CONTROL LIMIT Soil: 13	Criteria: A control limit of 75-125% RPD is applicable.
TOC	RPD CONTROL LIMIT Soil: 30	Not Applicable
MISCELLANEOUS INORGANICS: Dissolved Arsenic Dissolved Lead Dissolved Iron Dissolved Manganese Dissolved Sodium Dissolved Calcium Dissolved Magnesium Sulfate Chloride Nitrate TDS TSS Total Alkalinity Bicarbonate Alkalinity Carbonate Alkalinity pH	RPD CONTROL LIMITS: WATER SOIL As 5 --- Pb 7 6 Fe 23 --- Mn 20 ---	No control limits have been established but RPD's were <=3.0%.

ENDNOTES FOR TABLES F-24 TO F-26

TPH - Total Petroleum Hydrocarbons (Oils and Greases)
TOC - Total Organic Carbon
TDS - Total Dissolved Solids
TSS - Total Suspended Solids
ICS - Interference Check Sample
TCL - Target Compound List
RRF - Relative Response Factors
SPCC - System Performance Check Compound
%RSD - Percent Relative Standard Deviation
%D - Percent Difference
ICV - Initial Calibration Verification
CCV - Continuing Calibration Verification
CRDL - Contract Required Detection Limit

TABLE F-27. LAUCKS TESTING LABORATORY METHOD SUMMARY FOR
SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

LX WM1:	A modification of method SW 3010. The volume is reduced once during digestion and diluted back up to ten times less than the starting volume. Both are HNO3 and HCl digestions.
LX WM1B:	A modification of Method SW 3005. The volume is reduced once during digestion and diluted back up to ten times less than the starting volume. Both are HNO3 and HCl digestions.
LX WM2:	A modification of Method SW 3020. The volume is reduced once during digestion with HNO3 and H2O2 and diluted back to starting volume.
LX WM3 A&B:	Modifications of SM 303E. Some of the volumes of reagents vary from SM, KI is used rather than NaI and Laucks uses preserved, not digested, sample.
LX WM4:	A modification of Method SW 7470. Some of the volumes of reagents vary from the SW method.
LX SM1 LX SM2:	A modification of Method SW 3050. Laucks uses samples which have been dried at 105 degrees C rather than as-recieved samples; some of the volumes of reagents vary; and digestion times vary.
LX SM3 A&B:	Modifications of Methods SW 7061 and SW 7741. Laucks digests the dried sample directly, rather than digesting an aliquot of a previous digest.
LX SM4:	A modification of Method SW 7471. Laucks uses a larger sample size and some of the volumes of reagents vary.
LX EP3:	A modification of Method SW 3010. The volume is reduced once during digestion and by a lesser amount than in SW 3010. Both are HNO3 and HCl digestions.
LX EP4:	A modification of Method SW 7470. Some of the volumes of reagents vary from the SW method.
LX SB9:	This is a method for determination of Total Organic Carbon in a soil or sediment sample, adapted from the Puget Sound Estuary Program protocols (Tetra Tech).
Note:	Test results for dissolved metals derive from analyses performed on sample aliquots which filtered in the field during sampling.

TABLE F-28. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR METALS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

SAIC Sample Number	Laboratory ID Number	ACCURACY MS/MSD Results	PRECISION Duplicate Sample (e)	Spiked Sample Results (f)	LCS Laboratory Control (g)	CRDL Verification ICP CRDL Standard Initial/Final	AA CRDL STANDARD	Significant Sample Results
MW1-4	15928-33							Pb(d)3.2ug/L
MW1-4DUP	15928-34							Pb(d)2.1ug/L
MW1-5	15928-35							Pb(d)2.0ug/L
MW1-6	15926-36							Pb(d)3.7ug/L
MW1-7	15928-37							Pb(d)2.4ug/L
MW1-8	15928-38							Pb(d)1.4ug/L
MW1-9	15928-39							Pb(d)1.0ug/L
MW1-10	15928-40							Pb(d)3.2ug/L
MW1-11	15928-41	As WITHIN LIMITS RPD = 7						Pb(d)6.3ug/L
MW1-12	15928-42							As(d)5ug/L Pb(d)2.1ug/L
MW1-12DUP	15928-43							As(d)6ug/L Pb(d)2.2ug/L
SOILS								
B1-1-15	15928-76	ALL WITHIN			Cr %R = 69.8	Be %R = 87/81		As 1.2mg/kg Pb 2.6mg/kg
B1-1-25	15928-77	LIMITS UNLESS			ALL OTHERS	Cd %R = 80/95		As 1.4mg/kg Pb 3.1mg/kg
B1-2-15	15928-78	NOTED			WITHIN	Cr %R = 136/124	Sb %R =103	As 1.9mg/kg Pb 3.2mg/kg
B1-2-25	15928-79				LIMITS	Cu %R = 91/88	As %R = 102	As 1.8mg/kg Pb 3.1mg/kg
B3-1-0	15928-80					Ni %R = 74/83	Pb %R = 104	Pb 8.7mg/kg As 5.6mg/kg Cu 12mg/kg Be 0.5mg/kg Ni 17mg/kg Cr 15mg/kg Zn 54mg/kg
B3-1-5	15928-81					Ag %R = 87/78	Tl %R = 102	Pb 13.9mg/kg As 8.9mg/kg Cu 22mg/kg Be 1.2mg/kg Ni 31mg/kg Cr 29mg/kg Zn 100mg/kg
B3-2-0	15928-82					Zn %R = 124/131		Pb 8mg/kg As 12mg/kg Cu 10mg/kg Be 0.4mg/kg Ni 23mg/kg Cr 15mg/kg Zn 48mg/kg

TABLE F-28. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR METALS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory ID Number	ACCURACY MS/MSD Results	PRECISION Duplicate Sample (e)	Spiked Sample Results (f)	LCS Laboratory Control (g)	CRDL Verification ICP CRDL Standard Initial/Final	AA CRDL STANDARD	Significant Sample Results
WATERS								
EB-4	15928-5				ALL WITHIN LIMITS	Be %R=92/89 Cd %R=88/113 Cr %R=96/67 Cu %R=173/117 Mn %R=62/97		Cu(3d) Cr(2d) Zn(9d)
EB-5	15928-6						As %R=100	Pb(1.9d) Cu(4d) Cr(4d) Zn(12d) Ni(4d)
FB-1	15928-10					Mn %R=62/97	Pb %R=610/118/102	Cu(2d) Zn(d)8ug/L
EB-11	15928-15	Ag RPD = 7 ALL OTHER ELEMENTS WITHIN LIMITS				Ni %R=80/78	Se %R=97	Pb(1.2d) Zn(6d)
MW3-1	15928-20					Ag %R=89/104	Tl %R=101	Pb(11d) Se(d)6ug/L Cu(d)8ug/L Ni(d)34ug/L Cr(d)2ug/L Zn(d)53ug/L
MW3-2	15928-21					Zn %R=848/120		Pb(d)5.2ug/L Cu(d)5ug/L Ni(d)15ug/L Cr(d)3ug/L Zn(d)24ug/L
MW3-2DUP	15928-22					Fe %R=122/141		Pb(d)4.0ug/L Cu(d)5ug/L Ni(d)14ug/L Cd(d)1ug/L Cr(d)3ug/L Zn(d)22ug/L

TABLE F-28. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR METALS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory ID Number	ACCURACY MS/MSD Results	PRECISION Duplicate Sample (e)	Spiked Sample Results (f)	LCS Laboratory Control (g)	CRDL Verification ICP CRDL Standard Initial/Final	AA CRDL STANDARD	Significant Sample Results
B3-5-2.5	15928-91							Pb 10.1mg/kg As 5.9mg/kg Cu 12mg/kg Be 0.6mg/kg Ni 20mg/kg Cd 0.6mg/kg Cr 20mg/kg Zn 65mg/kg
MW1-5-15	15928-92							As 1.2mg/kg Pb 3mg/kg
MW1-5-20	15928-93							As 1.3mg/kg Pb 2.6mg/kg
MW1-6-15	15928-94							As 4.8mg/kg Pb 2.8mg/kg
MW1-6-15DUP	15928-95							As 7mg/kg Pb 3.2mg/kg
MW1-6-20	15928-96	Be %R = 121/120 Cd %R = 126					Sb %R = 103 Pb %R = 92 Tl %R = 99	As 5.7mg/kg Pb 2.2mg/kg
MW1-7-15	15928-97							As 4.1mg/kg Pb 2.9mg/kg
MW1-7-20	15928-98							As 3.4mg/kg Pb 2.2mg/kg
MW1-8-15	15928-99							As 4.9mg/kg Pb 2.2mg/kg
MW1-8-20	15928-100							As 5.3mg/kg Pb 2.2mg/kg
MW1-9-15	15928-101							As 2.4mg/kg Pb 2.8mg/kg
MW1-9-20	15928-102							As 2.6mg/kg Pb 2.6mg/kg
MW1-10-15	15928-103							As 2.2mg/kg Pb 3.3mg/kg
MW1-10-15DUP	15928-104							As 2.2mg/kg Pb 3mg/kg
MW1-10-20	15928-105							As 1.6mg/kg Pb 2.5mg/kg
MW1-11-15	15928-106							As 4.4mg/kg Pb 2.6mg/kg
MW1-11-20	15928-107							As 3.8mg/kg Pb 2.4mg/kg

TABLE F-28. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR METALS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory ID Number	ACCURACY MS/MSD Results	PRECISION Duplicate Sample (e)	Spiked Sample Results (f)	LCS Laboratory Control (g)	CRDL Verification ICP CRDL Standard Initial/Final	AA CRDL STANDARD	Significant Sample Results
B3-2-0DUP	15928-83							Pb 7.8mg/kg As 9.2mg/kg Cu 10mg/kg Be 0.4mg/kg Ni 21mg/kg Cr 12mg/kg Zn 48mg/kg
B3-2-5	15928-84							
B3-3-0DUP	15928-85							Pb 6.2mg/kg As 8.9mg/kg Cu 9mg/kg Be 0.3mg/kg Ni 23mg/kg Cr 12mg/kg Zn 46mg/kg
B3-3-0DUP	15928-86							Pb 7.9mg/kg As 8.4mg/kg Cu 11mg/kg Be 0.3mg/kg Ni 21mg/kg Cr 12mg/kg Zn 49mg/kg
B3-3-2.5	15928-87							Pb 10.8mg/kg As 7mg/kg Cu 14mg/kg Be 0.7mg/kg Ni 22mg/kg Cr 20mg/kg Zn 71mg/kg
B3-4-0	15928-88							Pb 15.1mg/kg As 8.9mg/kg Cu 18mg/kg Be 1mg/kg Ni 25mg/kg Cr 25mg/kg Zn 87mg/kg
B3-4-5	15928-89							Pb 13.8mg/kg As 8.6mg/kg Cu 19mg/kg Be 1.1mg/kg Ni 31mg/kg Cd 0.5mg/kg Cr 27mg/kg Zn 110mg/kg
B3-5-0	15928-90							Pb 12.4mg/kg As 6.2mg/kg Cu 10mg/kg Be 0.4mg/kg Ni 17mg/kg Cr 16mg/kg Zn 52mg/kg

TABLE F-28. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR METALS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory ID Number	ACCURACY MS/MSD Results	PRECISION Duplicate Sample (e)	Spiked Sample Results (f)	LCS Laboratory Control (g)	CRDL Verification ICP CRDL Standard Initial/Final	AA CRDL STANDARD	Significant Sample Results
MW3-3	15928-23							Pb(d)16ug/L As(d)30ug/L Se(d)5ug/L Cu(d)14ug/L Ni(d)27ug/L Cd(d)1ug/L Cr(d)7ug/L Zn(d)47ug/L
MW3-4	15928-24							Pb(d)8.5ug/L As(d)8ug/L Se(d)9ug/L Cu(d)10ug/L Ni(d)20ug/L Cr(d)6ug/L Zn(d)36ug/L
MW3-5	15928-25							Pb(d)13ug/L As(d)6ug/L Se(d)7ug/L Cu(d)13ug/L Ni(d)25ug/L Cr(d)7ug/L Zn(d)42ug/L
EB-13	15928-27							Pb(d)1.4ug/L Cu(d)3ug/L Zn(d)14ug/L
EB-14	15928-28							Pb(d)1.9ug/L Zn(d)5ug/L
FB-2	15928-29	Sb WITHIN LIMITS	RPD = 16					Pb(d)2.6ug/L Zn(d)5ug/L
EB-7	15928-8				ALL WITHIN LIMITS		As %R=100	
EB-8	15928-11						Pb %R=610/118/102	Pb(d)1.5ug/L
EB-9	15928-12							Pb(d)1.1ug/L
EB-10	15928-14							Pb(d)2.5ug/L
MW1-13	15928-18							Pb(d)9.7ug/L
MW1-14	15928-19							Pb(d)1.4ug/L
EB-12	15928-26							
MW1-1	15928-31	Fe OUTSIDE LIMITS, Mn WITHIN LIMITS	Fe RPD = 31 Mn RPD = 20	Mn %R=128 ALL OTHER ELEMENTS WITHIN LIMITS				Fe(d)37ug/L Mn(d)2100ug/L Na(d)12mg/L Ca(d)83mg/L Mg(d)17mg/L
EB-1	15928-1	As WITHIN LIMITS	RPD = 5		ALL WITHIN LIMITS		As %R=100	Pb(d)2ug/L
EB-3	15928-3						Pb %R=610/118/102	Pb(d)1ug/L
EB-6	15928-7							Pb(d)1.7ug/L
MW1-1	15928-31						As %R=100	
MW1-3	15928-32	Pb WITHIN LIMITS	RPD = 7		ALL WITHIN LIMITS		Pb %R=610/118/102	Pb(d)2.2ug/L Fe(d)5600ug/L Mn(d)2000ug/L Na(d)21mg/L Ca(d)160mg/L Mg(d)32mg/L

TABLE F-28. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR METALS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory ID Number	ACCURACY MS/MSD Results	PRECISION Duplicate Sample (e)	Spiked Sample Results (f)	LCS Laboratory Control (g)	CRDL Verification ICP CRDL Standard Initial/Final	AA CRDL STANDARD	Significant Sample Results
MW1-12-15	15928-108							As 2.8mg/kg Pb 2.6mg/kg
MW1-12-15	15928-109							As 2.8mg/kg Pb 2.8mg/kg
MW1-12-20	15928-110							As 5.2mg/kg Pb 2.3mg/kg
MW1-13-15	15928-111							As 1.2mg/kg Pb 2.4mg/kg
MW1-13-20	15928-112							As 1mg/kg Pb 2mg/kg
MW1-14-15	15928-113							As 21mg/kg Pb 7.1mg/kg
MW1-14-20	15928-114							As 3.3mg/kg Pb 2.1mg/kg
BK-2-15	15928-115							Pb 2.8mg/kg As 2.2mg/kg Cu 5mg/kg Ni 22mg/kg Cr 8mg/kg Zn 20mg/kg
BK-2-20	15928-116							Pb 2.4mg/kg As 1.8mg/kg Cu 3mg/kg Ni 14mg/kg Cr 9mg/kg Zn 17mg/kg
BK-2-25	15928-117							Pb 3.1mg/kg As 1.8mg/kg Cu 2mg/kg Ni 12mg/kg Cr 6mg/kg Zn 18mg/kg
BK3-0.5	15928-118							Pb 11mg/kg As 6.4mg/kg Se 0.6mg/kg Cu 13mg/kg Be 0.6mg/kg Ni 20mg/kg Cd 0.5mg/kg Cr 22mg/kg Zn 64mg/kg

TABLE F-28. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR METALS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory ID Number	ACCURACY MS/MSD Results	PRECISION Duplicate Sample (e)	Spiked Sample Results (f)	LCS Laboratory Control (g)	CRDL Verification ICP CRDL Standard Initial/Final	AA CRDL STANDARD	Significant Sample Results
BK3-5	15928-119							Pb 7.2mg/kg As 5.4mg/kg Cu 6mg/kg Be 0.3mg/kg Ni 18mg/kg Cr 10mg/kg Zn 35mg/kg
BK3-20	15928-120	Pb %R = 138.4 Be %R = 119/117 Pb RPD=24					Sb %R = 105 Pb %R = 96 Tl %R = 101	Pb 2.5mg/kg As 3.3mg/kg Cu 4mg/kg Ni 15mg/kg Cr 11mg/kg Zn 25mg/kg
FB-3	17709-02			SEE SAMPLE	ALL	NO ICP ANALYSES		As,Pb-ND
EB-15	17709-03			NUMBERS	WITHIN	CONDUCTED		As,Pb-ND
GW1-1	17709-04	Pb %R WITHIN LIMIPb RPD =15		17709-04 AND	LIMITS			As,Pb-ND
GW1-3	17709-05	As %R WITHIN LIMIAs RPD WITHIN		17709-05				As,Pb-ND
GW1-4	17709-06							Pb 1.1ug/L
GW1-4D	17709-07							Pb 0.8(J)ug/L
GW1-5	17709-08							As,Pb-ND
GW1-6	17709-09							As,Pb-ND
GW1-7	17709-10							As,Pb-ND
GW1-8	17709-11							As,Pb-ND
GW1-10	17709-12							As,Pb-ND
GW1-10D	17709-13							As,Pb-ND
GW1-11	17709-14							As,Pb-ND
GW1-12	17709-15							As 20 ug/L Pb 15 ug/L
GW1-13	17709-16							As,Pb-ND
GW1-14	17709-17							As,Pb-ND
SW-1	17709-18							As,Pb-ND
SW-2	17709-19							As,Pb-ND
SW-3	17709-20							As,Pb-ND

TABLE F-28. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR METALS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

(a) Control limits: 90-120 percent
(b) Contract required detection limits: ug/l

	water	soil
Al	200	20
Sb	60	20
As	60	20
Ba	10	0.5
Be	5	0.2
Ca	5000	5
Cd	5	2
Cr	10	4
Co	50	4
Cu	25	3
Fe	100	20
Pb	5	0.5
Mg	5000	20
Mn	15	1
Hg	0.2	0.5
Ni	40	5
K	5000	
Se	5	1
Ag	10	4
Na	5000	20
Tl	10	20
V	50	4
Zn	20	1

(c) Control limit: 80-120 percent for all elements.
(d) Control limits: 75-125 percent.
(e) Control limits: RPD<20%(water),<35%(soil)
(g) Control limits: 80-120 percent for all elements except Ag and Sb (water)

	soil
Al	69.2-130.5
Sb	60.2-139.3
As	69.2-130.8
Ba	0.0-833.3
Be	85.1-114.9
Cd	78.6-121.4
Ca	85.0-115.0
Cr	79.5-120.5
Co	86.3-112.5
Cu	86.9-113.2
Fe	79.2-120.7
Pb	79.7-120.8
Mn	85.1-114.9
Mg	85.0-110.0
Hg	66.9-133.9
Ni	80.8-119.2
K	0.0-2000.0
Se	48.7-151.5
Ag	69.8-130.6
Na	0.0-2000.0
Tl	63.1-137.2
V	78.6-121.4
Zn	73.8-126.2

(h)CRDL Verification no contract required control limits. Any recovery greater than zero is deemed unacceptable.

TABLE F-29. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR METALS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

SAIC Sample Number	Laboratory ID Number	Sample Collection Date	Holding Time Evaluation	CALIBRATION		BLANKS (CRDL's for water used)			ICP/ICS	
				Initial Calibration (a)	Continuing Calibration (a)	Initial Blank (b)	Continuing Blank (b)	Procedural* Blank (b)	Initial (c)	Final (c)
WATERS										
ER-4	15928-5	04-14-89	Hg-34 DAYS ALL OTHERS OK	IFB LIST ALL WITHIN LIMITS	IFB LIST ALL WITHIN LIMITS	NO INTERFERENTS	NO INTERFERENTS	Zn = 5ug/L NO OTHER INTERFERENTS	ALL WITHIN LIMITS	ALL WITHIN LIMITS
EB-5	15928-6	04-15-89	Hg-34 DAYS ALL OTHERS OK							
FB-1	15928-10	04-19-89	Hg-32 DAYS ALL OTHERS OK							
EB-11	15928-15	04-28-89	ALL OK							
MW3-1	15928-20	05-01-89	ALL OK							
MW3-2	15928-21	05-01-89	ALL OK							
MW3-2DUP	15928-22	05-01-89	ALL OK							

TABLE F-29. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR METALS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory ID Number	Sample Collection Date	Holding Time Evaluation	CALIBRATION		BLANKS (CRDL's for water used)			ICP/ICS	
				Initial Calibration (a)	Continuing Calibration (a)	Initial Blank (b)	Continuing Blank (b)	Procedural* Blank (b)	Initial (c)	Final (c)
BK-2-25	15928-117	04-28-89	ALL OK							
BK3-0.5	15928-118	04-28-89	ALL OK							
BK3-5	15928-119	04-28-89	ALL OK							
BK3-20	15928-120	04-28-89	ALL OK							
FB-3	17709-02	07-25-89	ALL OK	ALL	ALL	NO	NO	NO	NO ICS	
EB-15	17709-03	07-25-89	ALL OK	WITHIN	WITHIN	INTERFERENTS	INTERFERENTS	INTERFERENTS	ANALYSES	
GW1-1	17709-04	07-25-89	ALL OK	LIMITS	LIMITS	DETECTED	DETECTED	DETECTED	CONDUCTED	
GW1-3	17709-05	07-25-89	ALL OK							
GW1-4	17709-06	07-25-89	ALL OK							
GW1-4D	17709-07	07-25-89	ALL OK							
GW1-5	17709-08	07-25-89	ALL OK							
GW1-6	17709-09	07-25-89	ALL OK							
GW1-7	17709-10	07-25-89	ALL OK							
GW1-8	17709-11	07-25-89	ALL OK							
GW1-10	17709-12	07-25-89	ALL OK							
GW1-100	17709-13	07-25-89	ALL OK							
GW1-11	17709-14	07-25-89	ALL OK							
GW1-12	17709-15	07-25-89	ALL OK							
GW1-13	17709-16	07-25-89	ALL OK							
GW1-14	17709-17	07-25-89	ALL OK							
SW-1	17709-18	07-26-89	ALL OK							
SW-2	17709-19	07-26-89	ALL OK							
SW-3	17709-20	07-26-89	ALL OK							

TABLE F-29. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR METALS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory ID Number	Sample Collection Date	Holding Time Evaluation	CALIBRATION		BLANKS (CRDL's for water used)			ICP/ICS	
				Initial Calibration (a)	Continuing Calibration (a)	Initial Blank (b)	Continuing Blank (b)	Procedural* Blank (b)	Initial (c)	Final (c)
B3-4-5	15928-89	04-15-89	ALL OK							
B3-5-0	15928-90	04-15-89	ALL OK							
B3-5-2.5	15928-91	04-15-89	ALL OK							
MW1-5-15	15928-92	04-16-89	ALL OK							
MW1-5-20	15928-93	04-16-89	ALL OK							
MW1-6-15	15928-94	04-16-89	ALL OK							
MW1-6-15DUP	15928-95	04-16-89	ALL OK							
MW1-6-20	15928-96	04-16-89	ALL OK							
MW1-7-15	15928-97	04-17-89	ALL OK							
MW1-7-20	15928-98	04-17-89	ALL OK							
MW1-8-15	15928-99	04-17-89	ALL OK							
MW1-8-20	15928-100	04-17-89	ALL OK							
MW1-9-15	15928-101	04-25-89	ALL OK							

TABLE F-29. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR METALS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory ID Number	Sample Collection Date	Holding Time Evaluation	CALIBRATION		BLANKS (CRDL's for water used)			ICP/ICS	
				Initial Calibration (a)	Continuing Calibration (a)	Initial Blank (b)	Continuing Blank (b)	Procedural* Blank (b)	Initial (c)	Final (c)
MW3-3	15928-23	05-02-89	ALL OK							
MW3-4	15928-24	05-02-89	ALL OK							
MW3-5	15928-25	05-01-89	ALL OK							
EB-13	15928-27	05-01-89	ALL OK							
EB-14	15928-28	05-02-89	ALL OK							
FB-2	15928-29	04-30-89	ALL OK							
EB-7	15928-8	04-17-89	ALL OK	Pb As ONLY	Pb As ONLY	NO	NO	NO	NOT	
EB-8	15928-11	04-25-89	ALL OK	ALL	ALL	INTERFERENTS	INTERFERENTS	INTERFERENTS	ANALYZED	
EB-9	15928-12	04-26-89	ALL OK	WITHIN	WITHIN					
EB-10	15928-14	04-27-89	ALL OK	LIMITS	LIMITS					
MW1-13	15928-18	04-30-89	ALL OK							
MW1-14	15928-19	04-30-89	ALL OK							
EB-12	15928-26	04-30-89	ALL OK							
MW1-1	15928-31	04-30-89	ALL OK							
EB-1	15928-1	04-11-89	ALL OK	ALL (As,Pb ONLY)	ALL (As,Pb ONLY)	NO	NO	NO	NOT	
EB-3	15928-3	04-13-89	ALL OK	WITHIN	WITHIN	INTERFERENTS	INTERFERENTS	INTERFERENTS	ANALYZED	
EB-6	15928-7	04-16-89	ALL OK	LIMITS	LIMITS					
MW1-1	15928-31	04-30-89	ALL OK	ALL WITHIN LIMITS	ALL WITHIN LIMITS	NO INTERFERENTS	NO INTERFERENTS	NO INTERFERENTS	NOT ANALYZED	

TABLE F-29. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR METALS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

				CALIBRATION		BLANKS (CRDL's for water used)			ICP/ICS	
SAIC Sample Number	Laboratory ID Number	Sample Collection Date	Holding Time Evaluation	Initial Calibration (a)	Continuing Calibration (a)	Initial Blank (b)	Continuing Blank (b)	Procedural* Blank (b)	Initial (c)	Final (c)
MW1-9-20	15928-102	04-25-89	ALL OK							
MW1-10-15	15928-103	04-26-89	ALL OK							
MW1-10-15DUP	15928-104	04-26-89	ALL OK							
MW1-10-20	15928-105	04-26-89	ALL OK							
MW1-11-15	15928-106	04-26-89	ALL OK							
MW1-11-20	15928-107	04-26-89	ALL OK							
MW1-12-15	15928-108	04-27-89	ALL OK							
MW1-12-15DUP	15928-109	04-26-89	ALL OK							
MW1-12-20	15928-110	04-27-89	ALL OK							
MW1-13-15	15928-111	04-27-89	ALL OK							
MW1-13-20	15928-112	04-27-89	ALL OK							
MW1-14-15	15928-113	04-28-89	ALL OK							
MW1-14-20	15928-114	04-28-89	ALL OK							
BK-2-15	15928-115	04-28-89	ALL OK							
BK-2-20	15928-116	04-28-89	ALL OK							

TABLE F-29. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR METALS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

				CALIBRATION		BLANKS (CRDL's for water used)			ICP/ICS	
SAIC Sample Number	Laboratory ID Number	Sample Collection Date	Holding Time Evaluation	Initial Calibration (a)	Continuing Calibration (a)	Initial Blank (b)	Continuing Blank (b)	Procedural* Blank (b)	Initial (c)	Final (c)
MW1-3	15928-32	04-30-89	ALL OK	LIMITS (As,Pb ONLY)	LIMITS (As,Pb ONLY)	INTERFERENTS	INTERFERENTS	INTERFERENTS	ANALYZED	
MW1-4	15928-33	04-30-89	ALL OK	ALL (As,Pb Only)	ALL WITHIN					
MW1-4DUP	15928-34	04-30-89	ALL OK	WITHIN	LIMITS					
MW1-5	15928-35	04-30-89	ALL OK	LIMITS						
MW1-6	15926-36	04-30-89	ALL OK							
MW1-7	15928-37	04-30-89	ALL OK							
MW1-8	15928-38	04-30-89	ALL OK							
MW1-9	15928-39	04-30-89	ALL OK							
MW1-10	15928-40	04-30-89	ALL OK							
MW1-11	15928-41	04-30-89	ALL OK							
MW1-12	15928-42	04-30-89	ALL OK							
MW1-12DUP	15928-43	04-30-89	ALL OK							
SOILS										
B1-1-15	15928-76	04-11-89	ALL OK	Se %R = 84	Se %R = 84/91		ALL WITHIN LIMITS		ALL	Ag %R = 123
B1-1-25	15928-77	04-11-89	ALL OK	ALL OTHER	ALL OTHER				WITHIN	ALL OTHERS
B1-2-15	15928-78	04-13-89	ALL OK	PP Met List	PP Met List				LIMITS	WITHIN
B1-2-25	15928-79	04-13-89	ALL OK	WITHIN LIMITS	WITHIN LIMITS					LIMITS
B3-1-0	15928-80	04-14-89	ALL OK							

TABLE F-29. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR METALS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory ID Number	Sample Collection Date	Holding Time Evaluation	CALIBRATION		BLANKS (CRDL's for water used)			ICP/ICS	
				Initial Calibration (a)	Continuing Calibration (a)	Initial Blank (b)	Continuing Blank (b)	Procedural* Blank (b)	Initial (c)	Final (c)
B3-1-5	15928-81	04-14-89	ALL OK							
B3-2-0	15928-82	04-14-89	ALL OK							
B3-2-0DUP	15928-83	04-14-89	ALL OK							
B3-2-5	15928-84	04-14-89	ALL OK							
B3-3-0DUP	15928-85	04-14-89	ALL OK							
B3-3-0DUP	15928-86	04-14-89	ALL OK							
B3-3-2.5	15928-87	04-14-89	ALL OK							
B3-4-0	15928-88	04-15-89	ALL OK							

TABLE F-30. LABORATORY QUALITY CONTROL SAMPLE RESULTS FOR VOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

SAIC Sample Number	Laboratory Identification Number	Sample Collection Date	Sample Analysis Date(s)	Volatile Tuning/Mass Calibration	Initial Calibration Check	Continuing Calibration Check	Volatile Blank Analyses
METHOD BLANK (WATERS)	B0420MVOWJ1		04-20-89	ALL CRITERIA IN CONTROL	DAILY TUNE IN CONTROL 04-19-89 ALL %RSD VALUES WITHIN LIMITS 2BUT,t13DCPe, 2HEX <.3 ALL OTHER RRF VALUES WITHIN LIMITS	0420V2J1 ALL RRF50, %D VALUES WITHIN LIMITS	NO CONTAMINANTS DETECTED
EB-1	15928-01	04-11-89	04-20-89				
TB-1	15928-02	04-11-89	04-20-89				
EB-3	15928-03	04-13-89	04-20-89				
METHOD BLANK (WATERS)	B0421MVOWJ1		04-21-89	ALL CRITERIA IN CONTROL	04-19-89 ALL %RSD VALUES WITHIN LIMITS 2BUT,t13DCPe, 2HEX <.3 ALL OTHER RRF VALUES WITHIN LIMITS	0421V2J1 2BUT,t13DCPe, 2HEX <.300 ALL OTHER RRF50, %D VALUES WITHIN LIMITS	NO CONTAMINANTS DETECTED
FB-1	15928-10	04-19-89	04-21-89				
TB-3	15928-09	04-14-89	04-21-89				
EB-7	15928-08	04-17-89	04-21-89				
EB-6	15928-07	04-16-89	04-21-89				
EB-5	15928-06	04-15-89	04-21-89				
EB-4	15928-05	04-14-89	04-21-89				
TB-2	15928-04	04-13-89	04-21-89				
EB-7MS	15928-08MS	04-17-89	04-21-89				
EB-7MSD	15928-08MSD	04-17-89	04-21-89				
METHOD BLANK (WATERS)	B0428MVOWJ1		04-28-89	ALL CRITERIA IN CONTROL	04-19-89 ALL %RSD VALUES WITHIN LIMITS 2BUT,t13DCPe, 2HEX <.3 ALL OTHER RRF VALUES WITHIN LIMITS	0428V2J2 2BUT,t13DCPe,2HEX RRF50<.300 ALL OTHER RRF50, %D VALUES WITHIN LIMITS	NO CONTAMINANTS DETECTED
EB-8	15928-11	04-25-89	04-28-89				
EB-9	15928-12	04-26-89	04-28-89				
TB-4	15928-13	04-25-89	04-28-89				
METHOD BLANK (WATERS)	B0503MVOWS1		05-03-89	ALL CRITERIA IN CONTROL	04-25-89 ALL CCC/SPCC CRITERIA MET ALL %RSD VALUES <30.	0503V2S1 ACETONE,2BUT,TCE, MIPK,2HEX,PCE RRF50<.300 CHLOROMETHANE, CS2,CCL4,PCA, %D=>25 ALL OTHER RRF50 %D VALUES WITHIN LIMITS	NO CONTAMINANTS DETECTED
EB-10	15928-14	04-27-89	05-03-89				
EB-11	15928-15	04-28-89	05-03-89				
TB-5	15928-16	04-27-89	05-03-89				
MW1-13	15928-18	04-30-89	05-03-89				
TB-6	15928-17	04-28-89	05-03-89				
MW1-14	15928-19	04-30-89	05-03-89				
MW3-1	15928-20	05-01-89	05-03-89				
MW3-2	15928-21	05-01-89	05-03-89				
MW3-2DUP	15928-22	05-01-89	05-03-89				
MW3-3	15928-23	05-02-89	05-03-89				
MW3-4	15928-24	05-02-89	05-03-89				
MW3-5	15928-25	05-01-89	05-03-89				

TABLE F-30. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR VOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Sample Collection Date	Sample Analysis Date(s)	Volatile Tuning/Mass Calibration	Initial Calibration Check	Continuing Calibration Check	Volatile Blank Analyses
METHOD BLANK (WATERS)	B0504MVOWS1		05-04-89	ALL CRITERIA		0504V2S2	CH2CL2=1ug/L
EB-12	15928-26	04-30-89	05-04-89	IN CONTROL		112TCA,2HEX,2BUT,	ALL
EB-13	15928-27	05-01-89	05-04-89			MIPK,ACETONE	OTHERS
EB-14	15928-28	05-02-89	05-04-89			RRF50<.3	UNDETECTED
FB-2	15928-29	04-30-89	05-04-89			CHLOROMETHANE	
						BROMOMETHANE	
						CHLOROETHANE	
						CS2,12DCE,2BUT,	
						PCA %D>25	
						ALL OTHER RRF50	
						%D VALUES WITHIN	
						LIMITS	
METHOD BLANK (WATER)	B0508MVOWS1		05-08-89	ALL CRITERIA		0508V2S2	NO
MW1-7	15928-37	04-30-89	05-08-89	IN CONTROL		ACETONE,2BUT,	CONTAMINANTS
MW1-6	15928-36	04-30-89	05-08-89			112TCA,MIPK,2HEX	DETECTED
MW1-5	15928-35	04-30-89	05-08-89			RRF50<.300	
MW1-4DUP	15928-34	04-30-89	05-08-89			CHLOROETHANE,CS2,	
MW1-4	15928-33	04-30-89	05-08-89			12DCE %D>25	
MW1-3	15928-32	04-30-89	05-08-89			ALL OTHER RRF50,	
MW1-1	15928-31	04-30-89	05-08-89			%D VALUES WITHIN	
TB-7	15928-30	04-30-89	05-08-89			LIMITS	
MW1-8	15928-38	04-30-89	05-08-89				
MW1-5MS	15928-35MS	04-30-89	05-08-89				
MW1-5MSD	15928-35MSD	04-30-89	05-08-89				
METHOD BLANK (WATERS)	B0509MVOWS1		05-09-89	ALL CRITERIA		0509V2S2	NO
MW1-9	15928-39	04-30-89	05-09-89	IN CONTROL		ACETONE,2BUT,	CONTAMINANTS
MW1-10	15928-40	04-30-89	05-09-89			12DCP,MIPK,2HEX	DETECTED
MW1-11	15928-41	04-30-89	05-09-89			RRF50 <.300	
MW1-12	15928-42	04-30-89	05-09-89			CHLOROETHANE,	
MW1-12DL	15928-42DL	04-30-89	05-09-89			CS2,12DCE,TCE,	
MW1-12DUP	15928-43	04-30-89	05-09-89			XYLENE %D>25	
TB-8	15928-44	04-30-89	05-09-89				
MW1-10MS	15928-40MS	04-30-89	05-09-89				
MW1-10MSD	15928-40MSD	04-30-89	05-09-89				
METHOD BLANK (SOILS)	B0420MVOSS1		04-20-89	ALL CRITERIA		0420V2S1	
B1-1-25	15928-77	04-11-89	04-20-89	IN CONTROL		2BUT,2HEX	
B1-1-15	15928-76	04-11-89	04-20-89			RRF50 <.300	
B3-1-0	15928-80	04-14-89	04-20-89			CHLOROETHANE,	
B3-2-0	15928-82	04-14-89	04-20-89			CS2,12DCA,2BUT,	
B3-2-0DUP	15928-83	04-14-89	04-20-89			111TCA,CCL4,	
B3-2-0MS	15928-83MS	04-14-89	04-20-89			VACE,BDCM,	
B3-2-0MSD	15928-83MSD	04-14-89	04-20-89			c13DCPe,TCE,DBCM,	
B3-2-5	15928-84	04-14-89	04-20-89			t13DCPe,BFB %D>25	
B3-1-5	15928-81	04-14-89	04-20-89			ALL OTHER RRF50	
						%D VALUES WITHIN	
						LIMITS	

TABLE F-30. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR VOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Sample Collection Date	Sample Analysis Date(s)	Volatile Tuning/Mass Calibration	Initial Calibration Check	Continuing Calibration Check	Volatile Blank Analyses
METHOD BLANK (SOILS)	B0420MVOSS2		04-20-89	ALL CRITERIA		0420V2S1	NO
B1-2-15	15928-78	04-13-89	04-20-89	IN CONTROL		2BUT,2HEX	CONTAMINANTS
B1-2-25	15928-79	04-13-89	04-20-89			RRF50 <.300	DETECTED(DL100X)
B3-3-0DUP	15928-85	04-14-89	04-20-89			CHLOROETHANE, CS2,12DCA,2BUT, 111TCA,CCL4, VACE,BDCM, c13DCPe,TCE,DBCM, t13DCPe,BFB %D>25 ALL OTHER RRF50 %D VALUES WITHIN LIMITS	
METHOD BLANK (SOILS)	B0421MVOSS2		04-21-89	ALL CRITERIA		0421V2S1	NO
B3-3-2.5	15928-87	04-14-89	04-21-89	IN CONTROL		2BUT,2HEX	CONTAMINANTS
B3-3-2.5DL	15928-87DL	04-14-89	04-21-89			RRF50<.300	DETECTED(DL100X)
B3-3-0DUP	15928-86	04-14-89	04-21-89			CHLOROMETHANE, CHLOROETHANE, MeCL2,CS2,12DCA, 111TCA,CCL4,VACE, TCE,BENZENE, t13DCPe,BFB %D>25 ALL OTHER RRF50 %D VALUES WITHIN LIMITS	
B3-3-0MS	15928-86MS	04-14-89	04-21-89				
B3-3-0MSD	15928-86MSD	04-14-89	04-21-89				
METHOD BLANK (SOILS)	B0421MVOSS1		04-21-89	ALL CRITERIA		0421V2S1	NO
B3-5-2.5	15928-91	04-15-89	04-21-89	IN CONTROL		2BUT,2HEX	CONTAMINANTS
B3-5-0	15928-90	04-15-89	04-21-89			RRF50<.300	DETECTED
B3-4-5	15928-89	04-15-89	04-21-89			CHLOROMETHANE, CHLOROETHANE, MeCL2,CS2,12DCA, 111TCA,CCL4,VACE, TCE,BENZENE, t13DCPe,BFB %D>25 ALL OTHER RRF50 %D VALUES WITHIN LIMITS	
B3-4-0	15928-88	04-15-89	04-21-89				
MW1-5-20	15928-93	04-16-89	04-21-89				
MW1-6-15	15928-94	04-16-89	04-21-89				
MW1-5-15	15928-92	04-16-89	04-21-89				
METHOD BLANK (SOILS)	B0424MVOSS1		04-24-89	ALL CRITERIA		0424V2S2	NO
MW1-6-15DUP	15928-95	04-16-89	04-24-89	IN CONTROL		2BUT,2HEX	CONTAMINANTS
MW1-6-20	15928-96	04-16-89	04-24-89			RRF50<.3	DETECTED
MW1-7-15	15928-97	04-17-89	04-24-89			CS2,CCL4,BDCM, TCE,DBCM,t13DCPe, 2HEX,PCE %D>25 ALL OTHER RRF50 %D VALUES WITHIN LIMITS	
MW1-7-20	15928-98	04-17-89	04-24-89				
MW1-7-20MS	15928-98MS	04-17-89	04-24-89				
MW1-7-20MSD	15928-98MSD	04-17-89	04-24-89				
MW1-8-20	15928-100	04-17-89	04-24-89				
MW1-8-15	15928-99	04-17-89	04-24-89				

TABLE F-30. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR VOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Sample Collection Date	Sample Analysis Date(s)	Volatile Tuning/Mass Calibration	Initial Calibration Check	Continuing Calibration Check	Volatile Blank Analyses
METHOD BLANK (SOILS)	B0427MVOSJ1		04-27-89	ALL CRITERIA IN CONTROL		0427V2J1 2BUT,112TCA, t13DCPe,2HEX RRF50<.3 2BUT,BDCM,c13DCPe %D>25 ALL OTHER RRF50 %D VALUES WITHIN LIMITS	NO CONTAMINANTS DETECTED
MW1-9-15	15928-101	04-25-89	04-27-89				
MW1-9-20	15928-102	04-25-89	04-27-89				
MW1-10-15	15928-103	04-26-89	04-27-89				
MW1-10-15DUP	15928-104	04-26-89	04-27-89				
MW1-10-20	15928-105	04-26-89	04-27-89				
MW1-11-15	15928-106	04-26-89	04-27-89				
MW1-11-20	15928-107	04-26-89	04-27-89				
METHOD BLANK (SOILS)	B0509MVOSJ2		05-09-89	ALL CRITERIA IN CONTROL		0509V2J1 2BUT,2HEX RRF50<.3 CS2,12DCE, c13DCPe,BENZENE PCA %D>25 ALL OTHER RRF50 %D VALUES WITHIN LIMITS	NO CONTAMINANTS DETECTED(DL100X)
MW1-12-15DUP	15928-109	04-27-89	05-09-89				
MW1-12-15	15928-108	04-27-89	05-09-89				
METHOD BLANK (SOILS)	B0508MVOSJ1		05-08-89	ALL CRITERIA IN CONTROL		0508V2J1 2BUT,2HEX RRF50<.3 CS2,12DCE,TCE, BENZENE %D>25 ALL OTHER RRF50 %D VALUES WITHIN LIMITS	NO CONTAMINANTS DETECTED
MW1-12-20	15928-110	04-27-89	05-08-89				
MW1-13-15	15928-111	04-27-89	05-08-89				
MW1-13-20	15928-112	04-27-89	05-08-89				
MW1-14-15	15928-113	04-28-89	05-08-89				
MW1-14-20	15928-114	04-28-89	05-08-89				
BK-2-15	15928-115	04-28-89	05-08-89				
BK-2-20	15928-116	04-28-89	05-08-89				
BK-2-20 REANALYSIS	15928-116RE	04-28-89	05-08-89				
METHOD BLANK (SOILS)	B0509MVOSJ1		05-09-89	ALL CRITERIA IN CONTROL		05090V2J1 2BUT,2HEX RRF50<.3 CS2,12DCE, c13DCPe,BENZENE, PCA %D>25 ALL OTHER RRF50 %D VALUES WITHIN LIMITS	NO CONTAMINANTS DETECTED
BK2-25	15928-117	04-28-89	05-09-89				
BK3-0.5	15928-118	04-28-89	05-09-89				
BK3-5	15928-119	04-28-89	05-09-89				
BK3-20	15928-120	04-28-89	05-09-89				
BK2-25MS	15928-117MS	04-28-89	05-09-89				
BK2-25MSD	15928-117MSD	04-28-89	05-09-89				
METHOD BLANK	B0802MVOWJ1		08-02-89	ALL CRITERIA MET			NO CONTAMINANTS DETECTED
TB-9	8907065-01	07-25-89	08-02-89				
FB-3	8907065-02	07-25-89	08-02-89				
EB-15	8907065-03	07-25-89	08-02-89				
GW1-1	8907065-04	07-25-89	08-02-89				
GW1-3	8907065-05	07-25-89	08-02-89				
GW1-4	8907065-06	07-25-89	08-02-89				
GW1-10D	8907065-13	07-25-89	08-02-89				
SW-2	8907065-19	07-26-89	08-02-89				
SW-2MS	8907065-19MS	07-26-89	08-02-89				
SW-2MSD	8907065-19MSD	07-26-89	08-02-89				

TABLE F-30. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR VOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Sample Collection Date	Sample Analysis Date(s)	Volatile Tuning/Mass Calibration	Initial Calibration Check	Continuing Calibration Check	Volatile Blank Analyses
METHOD BLANK	B0802MV0WS1		08-02-89	ALL			NO
GW1-6	8907065-09	07-25-89	08-02-89	CRITERIA			CONTAMINANTS
GW1-10	8907065-12	07-25-89	08-02-89	MET			DETECTED
GW1-11	8907065-14	07-25-89	08-02-89				
GW1-12	8907065-15	07-25-89	08-02-89				
GW1-12DL	8907065-15DL	07-25-89	08-02-89				
GW1-13	8907065-16	07-25-89	08-02-89				
GW1-14	8907065-17	07-25-89	08-02-89				
SW-1	8907065-18	07-25-89	08-02-89				
SW-3	8907065-20	07-26-89	08-02-89				
METHOD BLANK	B0804MV0WJ2		08-04-89	ALL			
GW1-4D	8907065-07	07-25-89	08-04-89	CRITERIA			NO
GW1-5	8907065-08	07-25-89	08-04-89	MET			CONTAMINANTS
GW1-8	8907065-11	07-25-89	08-02-89				DETECTED

Control Limits for Water VOA Surrogate Recoveries
d8-Toluene: 88-110
Bromofluorobenzene: 86-115
d4-1,2-Dichloroethane: 76-114

Control Limits for Soil VOA Surrogate Recoveries
d8-Toluene: 81-117
Bromofluorobenzene: 74-121
d4-1,2-Dichloroethane: 70-121

Control Limits for Water VOA MS/MSD Percent Recoveries
1,1-Dichloroethene: 61-145, %RPD= 14
Trichloroethene: 71-120, %RPD=14
Benzene: 76-127, %RPD= 11
Toluene: 76-125, %RPD=13
Chlorobenzene: 75-130, %RPD=13

Control Limits for Soil VOA MS/MSD Percent Recoveries
1,1-Dichloroethene: 59-172, %RPD= 22
Trichloroethene: 62-137, %RPD= 24
Benzene: 66-142, %RPD= 21
Toluene: 59-139, %RPD= 21
Chlorobenzene: 60-133, %RPD= 21

TABLE F-31. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR VOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

SAIC Sample Number	Laboratory Identification Number	Volatile Surrogate Recovery	Volatile MS/MSD Analyses	Trip Blank Analyses	Equipment Wash Analyses	Field Blank Analyses	Significant Sample Results	Tentatively Identified Compounds
METHOD BLANK (WATER)	B0508MVOWS1	ALL						None Detected
MW1-7	15928-37	WITHIN		NA	NA	NA	ALL ND	None Detected
MW1-6	15928-36	LIMITS		NA	NA	NA	ALL ND	None Detected
MW1-5	15928-35			NA	NA	NA	ALL ND	None Detected
MW1-4DUP	15928-34			NA	NA	NA	XYL=52ug/L	Total=589ug/L
MW1-4	15928-33			NA	NA	NA	XYL=22ug/L	Total=630ug/L
MW1-3	15928-32			NA	NA	NA	ALL ND	Total=340ug/L
MW1-1	15928-31			NA	NA	NA	ALL ND	None Detected
TB-7	15928-30			ALL ND	NA	NA		None Detected
MW1-8	15928-38			NA	NA	NA	ALL ND	Total=610ug/L
MW1-5MS	15928-35MS		ALL WITHIN	NA	NA	NA		
MW1-5MSD	15928-35MSD		LIMITS	NA	NA	NA		
METHOD BLANK (WATERS)	B0509MVOWS1	ALL						None Detected
MW1-9	15928-39	WITHIN		NA		NA	ALL ND	None Detected
MW1-10	15928-40	LIMITS		NA		NA	ALL ND	Total=36ug/L
MW1-11	15928-41			NA		NA	ALL ND	Total=880ug/L
MW1-12	15928-42			NA		NA	ETHB=170/XYL=840ug/L	Total=1800ug/L
MW1-12DL	15928-42DL			NA		NA	ETHB=160/XYL=1100ug/L	Total=3400ug/L
MW1-12DUP	15928-43			NA		NA	ETHB=32/XYL=220ug/L	Total=660ug/L
TB-8	15928-44			ALL ND		NA		None Detected
MW1-10MS	15928-40MS		ALL WITHIN	NA		NA		
MW1-10MSD	15928-40MSD		LIMITS	NA		NA		
METHOD BLANK (SOILS)	B0420MVOSS1	ALL						None Detected
B1-1-25	15928-77	WITHIN		NA		NA	ACE=79ug/Kg	Total=1100ug/Kg
B1-1-15	15928-76	LIMITS		NA		NA	XYL=150ug/Kg	Total=3500ug/Kg
B3-1-0	15928-80			NA		NA	XYL=53ug/Kg	Total=6800ug/Kg
B3-2-0	15928-82			NA		NA	ALL ND	None Detected
B3-2-0DUP	15928-83			NA		NA	ALL ND	None Detected
B3-2-0MS	15928-83MS		ALL WITHIN	NA		NA		
B3-2-0MSD	15928-83MSD		LIMITS	NA		NA		
B3-2-5	15928-84			NA		NA	ALL ND	None Detected
B3-1-5	15928-81			NA		NA	ACE=220/TOL=1100/XYL=1600	Total=7900ug/Kg
METHOD BLANK (SOILS)	B0420MVOSS2	ALL						None Detected
B1-2-15	15928-78	WITHIN		NA		NA	XYL=2200ug/Kg	Total=47000ug/Kg
B1-2-25	15928-79	LIMITS		NA		NA	ETHB=920/XYL=14000ug/Kg	Total=100000ug/Kg
B3-3-0DUP	15928-85			NA		NA	ETHB=2700/XYL=5400ug/Kg	Total=180000ug/Kg
METHOD BLANK (SOILS)	B0421MVOSS2	ALL						None Detected
B3-3-2.5	15928-87	WITHIN		NA		NA	ETHB=40000/XYL=70000ug/Kg	Total=300000ug/Kg
B3-3-2.5DL	15928-87DL	LIMITS		NA		NA	ETHB=33000/XYL=60000ug/Kg	Total=400000ug/Kg
B3-3-0DUP	15928-86			NA		NA	ETHB=17000/TOL=17000ug/Kg	Total=400000ug/Kg
B3-3-0MS	15928-86MS		ALL WITHIN	NA		NA		
B3-3-0MSD	15928-86MSD		LIMITS	NA		NA		

TABLE F-31. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR VOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Volatile Surrogate Recovery	Volatile MS/MSD Analyses	Trip Blank Analyses	Equipment Wash Analyses	Field Blank Analyses	Significant Sample Results	Tentatively Identified Compounds
METHOD BLANK (WATERS)	B0420MVOWJ1	ALL						None Detected
EB-1	15928-01	WITHIN		NA	MeCL2=4/TOL=2	NA		None Detected
TB-1	15928-02	LIMITS		ALL ND	NA	NA		None Detected
EB-3	15928-03			NA	MeCL2=4/ACE=13/TOL=2	NA		None Detected
METHOD BLANK (WATERS)	B0421MVOWJ1	ALL						None Detected
FB-1	15928-10	WITHIN		NA	NA	ALL ND		None Detected
TB-3	15928-09	LIMITS		ALL ND	NA	NA		None Detected
EB-7	15928-08			NA	MeCl2=4	NA		None Detected
EB-6	15928-07			NA	MeCl2=4/ACE=10/TOL=3	NA		Total=9ug/L
EB-5	15928-06			NA	MeCl2=4/ACE=16	NA		None Detected
EB-4	15928-05			NA	MeCL2=5/ACE=18	NA		None Detected
TB-2	15928-04			ALL ND	NA	NA		None Detected
EB-7MS	15928-08MS		ALL WITHIN	NA	NA	NA		
EB-7MSD	15928-08MSD		LIMITS	NA	NA	NA		
METHOD BLANK (WATERS)	B0428MVOWJ1	ALL						None Detected
EB-8	15928-11	WITHIN		NA	ALL ND	NA		None Detected
EB-9	15928-12	LIMITS		NA	ACE=20	NA		None Detected
TB-4	15928-13			ALL ND	NA	NA		None Detected
METHOD BLANK (WATERS)	B0503MVOWS1	ALL						None Detected
EB-10	15928-14	WITHIN		NA	MeCl2=2	NA		None Detected
EB-11	15928-15	LIMITS		NA	MeCl2=3/TOL=2	NA		None Detected
TB-5	15928-16			ALL ND	NA	NA		None Detected
MW1-13	15928-18			NA	NA	NA	ALL ND	None Detected
TB-6	15928-17			ALL ND	NA	NA		None Detected
MW1-14	15928-19			NA	NA	NA	ALL ND	Total=8ug/L
MW3-1	15928-20			NA	NA	NA	ALL ND	None Detected
MW3-2	15928-21			NA	NA	NA	ALL ND	Total=9ug/L
MW3-2DUP	15928-22			NA	NA	NA	ALL ND	None Detected
MW3-3	15928-23			NA	NA	NA	ALL ND	Total=22ug/L
MW3-4	15928-24			NA	NA	NA	ALL ND	Total=82ug/L
MW3-5	15928-25			NA	NA	NA	ALL ND	Total=31ug/L
METHOD BLANK (WATERS)	B0504MVOWS1	ALL						None Detected
EB-12	15928-26	WITHIN		NA	MeCl2=28	NA		Total=96ug/L
EB-13	15928-27	LIMITS		NA	MeCl2=28	NA		Total=43ug/L
EB-14	15928-28			NA	MeCl2=28	NA		Total=17ug/L
FB-2	15928-29			NA	NA	MeCl2=28		None Detected

TABLE F-31. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR VOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Volatile Surrogate Recovery	Volatile MS/MSD Analyses	Trip Blank Analyses	Equipment Wash Analyses	Field Blank Analyses	Significant Sample Results	Tentatively Identified Compounds
METHOD BLANK (SOILS)	B0509MV0SJ1	ALL						None Detected
BK2-25	15928-117	WITHIN		NA		NA	ACE=41ug/Kg	None Detected
BK3-0.5	15928-118	LIMITS		NA		NA	XYL=3ug/Kg	None Detected
BK3-5	15928-119			NA		NA	ACE=37/XYL=2ug/Kg	None Detected
BK3-20	15928-120			NA		NA	MeCl2=3/ACE=49ug/Kg	None Detected
BK2-25MS	15928-117MS		ALL WITHIN	NA		NA		
BK2-25MSD	15928-117MSD		LIMITS	NA		NA		
METHOD BLANK (WATERS)	B0802MV0WJ1	ALL						
TB-9	8907065-01	WITHIN		ACE=8ug/L				NONE DETECTED
FB-3	8907065-02	LIMITS				NONE DETECTED		NONE DETECTED
EB-15	8907065-03				ACE=7/TOL=2/XYL=1ug/L			NONE DETECTED
GW1-1	8907065-03							NONE DETECTED
GW1-3	8907065-05						NO ANALYTES DETECTED	NONE DETECTED
GW1-4	8907065-06						ACE=6/XYL=37ug/L	TOTAL=410ug/L
GW1-7	8907065-10						ACE=6/XYL=2ug/L	TOTAL=910ug/L
GW1-10D	8907065-13						NO ANALYTES DETECTED	NONE DETECTED
SW-2	8907065-19						NO ANALYTES DETECTED	TOTAL=8ug/L
SW-2MS	8907065-19MS		ALL WITHIN				NO ANALYTES DETECTED	NONE DETECTED
SW-2MSD	8907065-19MSD		LIMITS					
METHOD BLANK (WATERS)	B0802MV0WS1	ALL		TB-9	EB-15	FB-3		
GW1-6	8907065-09	WITHIN						NONE DETECTED
GW1-10	8907065-12	LIMITS					NO ANALYTES DETECTED	NONE DETECTED
GW1-11	8907065-14						NO ANALYTES DETECTED	NONE DETECTED
GW1-12	8907065-15						XYL=1ug/L	TOTAL=12ug/L
GW1-12DL	8907065-15DL						ETHBENZ=58/XYL=350ug/L	TOTAL=1200ug/L
GW1-13	8907065-16							TOTAL=1100ug/L
GW1-14	8907065-17							NONE DETECTED
SW-1	8907065-18							NONE DETECTED
								NONE DETECTED
SW-3	8907065-20						NO ANALYTES DETECTED	NONE DETECTED
METHOD BLANK (WATERS)	B0804MV0WJ2	ALL		TB-9	EB-15	FB-3		
GW1-4D	8907065-07	WITHIN						NONE DETECTED
GW1-5	8907065-08	LIMITS					NO ANALYTES DETECTED	TOTAL=460ug/L
GW1-8	8907065-11						NO ANALYTES DETECTED	NONE DETECTED
							NO ANALYTES DETECTED	TOTAL=180ug/L

TABLE F-31. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR VOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Volatile Surrogate Recovery	Volatile MS/MSD Analyses	Trip Blank Analyses	Equipment Wash Analyses	Field Blank Analyses	Significant Sample Results	Tentatively Identified Compounds
METHOD BLANK (SOILS)	B0421MVOSS1	ALL						None Detected
B3-5-2.5	15928-91	WITHIN		NA		NA	MeCl2=5ug/Kg	None Detected
B3-5-0	15928-90	LIMITS		NA		NA	ALL ND	None Detected
B3-4-5	15928-89			NA		NA	MeCl2=4ug/Kg	None Detected
B3-4-0	15928-88			NA		NA	MeCl2=4ug/Kg	None Detected
MW1-5-20	15928-93			NA		NA	MeCl2=7/ACE=62ug/Kg	None Detected
MW1-6-15	15928-94			NA		NA	MeCl2=8/ACE=71ug/Kg	None Detected
MW1-5-15	15928-92			NA		NA	MeCl2=4/ACE=42ug/Kg	Total=38ug/Kg
METHOD BLANK (SOILS)	B0424MVOSS1	ALL						None Detected
MW1-6-15DUP	15928-95	WITHIN		NA		NA	MeCl2=3/ACE=61ug/Kg	None Detected
MW1-6-20	15928-96	LIMITS		NA		NA	MeCl2=3/ACE=36ug/Kg	None Detected
MW1-7-15	15928-97			NA		NA	MeCl2=4/ACE=62ug/Kg	None Detected
MW1-7-20	15928-98			NA		NA	MeCl2=3/ACE=57ug/Kg	None Detected
MW1-7-20MS	15928-98MS		ALL WITHIN	NA		NA		
MW1-7-20MSD	15928-98MSD		LIMITS	NA		NA		
MW1-8-20	15928-100			NA		NA	MeCl2=5/ACE=49ug/Kg	Total=3800ug/Kg
MW1-8-15	15928-99			NA		NA	ACE=97ug/Kg	Total=9500ug/Kg
METHOD BLANK (SOILS)	B0427MVOSJ1	ALL						None Detected
MW1-9-15	15928-101	WITHIN		NA		NA	MeCl2=8ug/Kg	None Detected
MW1-9-20	15928-102	LIMITS		NA		NA	MeCl2=6/ACE=32ug/Kg	None Detected
MW1-10-15	15928-103			NA		NA	MeCl2=6ug/Kg	None Detected
MW1-10-15DUP	15928-104			NA		NA	MeCl2=6ug/Kg	None Detected
MW1-10-20	15928-105			NA		NA	MeCl2=6/ACE=39ug/Kg	None Detected
MW1-11-15	15928-106			NA		NA	MeCl2=5/ACE=58ug/Kg	None Detected
MW1-11-20	15928-107			NA		NA	MeCl2=4/ACE=54ug/Kg	None Detected
METHOD BLANK (SOILS)	B0509MVOSJ2	ALL						None Detected
MW1-12-15DUP	15928-109	WITHIN		NA		NA	ALL ND (RAISED DLs)	Total=24000ug/Kg
MW1-12-15	15928-108	LIMITS		NA		NA	ALL ND (RAISED DLs)	Total=42000ug/Kg
METHOD BLANK (SOILS)	B0508MVOSJ1	ALL WITHIN						None Detected
MW1-12-20	15928-110	LIMITS EXCEPT		NA		NA	ACE=30ug/Kg	Total=290ug/Kg
MW1-13-15	15928-111	WHERE NOTED		NA		NA	ACE=61ug/Kg	None Detected
MW1-13-20	15928-112			NA		NA	ACE=67ug/Kg	None Detected
MW1-14-15	15928-113			NA		NA	ACE=75ug/Kg	None Detected
MW1-14-20	15928-114			NA		NA	ACE=53ug/Kg	None Detected
BK-2-15	15928-115			NA		NA	ACE=55ug/Kg	None Detected
BK-2-20	15928-116	TOL %R=57		NA		NA	ACE=66ug/Kg	None Detected
BK-2-20 REANALYSIS	15928-116RE	TOL %R=58		NA		NA	ACE=58ug/KG	None Detected

TABLE F-32. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR SEMIVOLATILE ORGANIC COMPOUNDS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Semivolatile Tuning/Mass Calibration	Initial Calibration Verification	Continuing Calibration Verification	Semivolatile Blank Analyses
METHOD BLANK:SBLKL1	B0418MSVWLM		04-18-89	04-24-89	LD24A	LK04B(11-04-88)	LD24A::D2	b2EthHexPhlt(1J)
EB-1	15928-01	04-11-89	04-18-89	04-24-89	ALL	ALL TUNING	ALL SPCC/CCC	NO OTHER
EB-3	15928-03	04-13-89	04-18-89	04-24-89	CRITERIA	CRITERIA MET	CRITERIA MET	INTERFERENTS
EB-4	15928-05	04-14-89	04-18-89	04-24-89	MET	ALL SPCC/CCC	%D VALUES>20:	DETECTED
EB-5	15928-06	04-15-89	04-18-89	04-24-89		CRITERIA MET	HClCP(22)	
EB-6	15928-07	04-16-89	04-18-89	04-24-89			33-DCBENZ(36)	
EB-7	15928-08	04-17-89	04-18-89	04-24-89			ALL OTHERS <20	
EB-7	15928-08MS	04-17-89	04-18-89	04-24-89				
EB-7	15928-08MSD	04-17-89	04-18-89	04-24-89				
METHOD BLANK:SBLKL2	B0425MSVWLM		04-25-89	05-01-89	LE01B:ALL	LK04B(11-04-88)	LE01B::D2	NO
FB-1	15928-10	04-19-89	04-25-89	05-01-89	CRITERIA MET		ALL SPCC/CCC	INTERFERENTS
							CRITERIA MET	DETECTED
							OTHER %D VALUES>20:	
							BENZYL-OH(50)	
							ALL OTHERS <20	
METHOD BLANK:SBLKL3	B0428MSVWLO		04-28-89	05-01-89	LE01B:ALL	LK04B(11-04-88)	LE01B::D2	b2EthHexPhlt(1J)
EB-8	15928-11	04-25-89	04-28-89	05-01-89	CRITERIA			NO OTHER
EB-9	15928-12	04-26-89	04-28-89	05-01-89	MET			INTERFERENTS
								DETECTED
METHOD BLANK:SBLKL5	B0503MSVWLG		05-03-89	05-10-89	LE10A	LK04B(11-04-88)	LE10A:::SS	b2EthHexPhlt(1J)
EB-10	15928-14	04-27-89	05-03-89	05-10-89	ALL		ALL SPCC/CCC	NO OTHER
EB-10	15928-14MS	04-27-89	05-03-89	05-10-89	CRITERRIA		CRITERIA MET	INTERFERENTS
EB-10	15928-14MSD	04-27-89	05-03-89	05-10-89	MET		OTHER %D VALUES >20:	DETECTED
EB-11	15928-15	04-28-89	05-03-89	05-10-89			4CHLOROANILINE(25)	
							HexClBut(23)	
							4Cl3CH3Ph(20)	
							HexClCyPent(25)	
							4BrPhPhETHER(23)	
							HexClBenz(22)	
							33DClbENZ(21)	
							b2EthHexPhlt(33)	
							DiN8Phlt(22)	
							ALL OTHERS <20.	
SBLKL6A	B0503MSVWLH		05-03-89	05-10-89	LE10A	LK04B(11-04-88)	LE10A:::SS	NO
MW3-2	15928-21	05-01-89	05-03-89	05-10-89	LE10A		LE10A:::SS	INTERFERENTS
MW1-13	15928-18	04-30-89	05-03-89	05-10-89	LE10A		LE10A:::SS	DETECTED
MW1-14	15928-19	04-30-89	05-03-89	05-24-89	LE24A:ALL	LK04B(11-04-88)	LE24A::D2	
MW3-1	15928-20	05-01-89	05-03-89	05-24-89	LE24A:CRITERIA		ALL CCC/SPCC	
MW3-2DUP	15928-22	05-01-89	05-03-89	05-24-89	LE24A:MET		CRITERIA MET	
MW3-3	15928-23	05-02-89	05-03-89	05-24-89	LE24A		OTHER %D VALUES>20%:	
MW3-4	15928-24	05-02-89	05-03-89	05-24-89	LE24A		b2ClISOPROPETH(45)	
							nNITROdinPROPYL(28)	
							BENZOIC-H(25)	
							4ClANILINE(26)	
							4NITROANILINE(25)	
							ALL OTHERS <20%.	

TABLE F-32. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR SEMIVOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Semivolatile Tuning/Mass Calibration	Initial Calibration Verification	Continuing Calibration Verification	Semivolatile Blank Analyses
MW3-5	15928-25	05-01-89	05-03-89	05-24-89	LE25C:ALL CRITERIA MET	LK04B(11-04-88)	LE25C::SS ALL CCC/SPCC CRITERIA MET OTHER %D VALUES>20: b2ClISOPROPETH(42) 4ClANILINE(24) 4NO3ANILINE(22) BUTBENZPHTHLT(23) 33DiClBENZ(26) b2ETHHEXPHTHLT(24) I123cdPYR(21) DiBENZANTH(27) BENZghiPERYL(24) ALL OTHERS<20%.	
METHOD BLANK:SBLKL6	B0504MSVWLG		05-04-89	05-11-89	LE11B:ALL CRITERIA	LK04B(11-04-88)	LE11B::SS ALL SPCC/CCC CRITERIA MET OTHER %D VALUES >20%: 4BrPhPhETHER(23) HexClBenz(23) PCP(22) b2EthHexPhlt(33) 24DClPhenol(22) 4ClANILINE(24) HexClCylPen(31) ALL OTHERS <20%.	NO INTERFERENTS DETECTED
MW1-3	15928-32	04-30-89	05-04-89	05-11-89	LE11B:MET			
MW1-4	15928-33	04-30-89	05-04-89	05-11-89	LE11B:			
MW1-5	15928-35	04-30-89	05-04-89	05-11-89	LE11B			
MW1-6	15928-36	04-30-89	05-04-89	05-12-89	LE11B			
MW1-7	15928-37	04-30-89	05-04-89	05-12-89	LE11B			
MW1-8	15928-38	04-30-89	05-04-89	05-12-89	LE11B			
MW1-9	15928-39	04-30-89	05-04-89	05-12-89	LE11B			

TABLE F-32. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR SEMIVOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Semivolatile Tuning/Mass Calibration	Initial Calibration Verification	Continuing Calibration Verification	Semivolatile Blank Analyses
MW1-10	15928-40	04-30-89	05-04-89	05-12-89	LE12A:ALL	LK04B(11-04-88)	LE12A:05-12-89 ALL SPCC CRITERIA MET CCC VALUES >25%: HEXClBUT(26) ALL OTHER VALUES<25% 4NO3ANILINE(23) 4BrPhPhETHER(24) PCP(21) BUTBENZPHLT(22) 33DClBENZIDINE(23) b2ETHHEXPHLT(32) 246TBP(28) 24DClPHENOL(22) 4ClANILINE(24) HEXClBUT(26 HEXClCYLPENTA(31) ALL OTHER %D VALUES<20.	
MW1-11	15928-41	04-30-89	05-04-89	05-12-89	LE12A:CRITERIA			
MW1-12	15928-42	04-30-89	05-04-89	05-12-89	LE12A:MET			
METHOD BLANK:SBLKL7	B0512MSVWLK		05-12-89	05-15-89	LE15A:ALL	LK04B(11-04-88)	LE15A::SS(05-15-89) ALL SPCC/CCC CRITERIA MET OTHER %D VALUES >20%: b2ClISOPROPETHER(20) 24DCPHENOL(20) 2ClANILINE22) HEXClBUT(24) HEXClCYLPENTA(30) 246TClPHENOL(21) 33DClBENZIDINE(25) b2ETHHEXPHLT(28) 246TBP(22)	b2EthHexPhlt(1J) NO OTHER INTERFERENTS DETECTED
MW1-13	15928-18RE	04-30-89	05-12-89	05-15-89	LE15A:CRITERIA			
MW1-14	15928-19RE	04-30-89	05-12-89	05-15-89	LE15A:MET			
MW3-1	15928-20RE	05-01-89	05-12-89	05-15-89	LE15A			
MW3-3	15928-23RE	05-01-89	05-12-89	05-15-89	LE15A			
MW3-3	15928-23MS	05-01-89	05-12-89	05-15-89	LE15A			
MW3-3	15928-23MSD	05-01-89	05-12-89	05-16-89	LE15A			
MW3-2	15928-21RE	05-01-89	05-12-89	05-18-89	LE18A:ALL		LE18A::SS	
MW3-2	15928-22RE	05-01-89	05-12-89	05-18-89	LE18A:CRITERIA		LE18A::SS	
MW3-4	15928-24RE	05-02-89	05-12-89	05-18-89	LE18A:MET		LE18A::SS	
MW3-5	15928-25RE	05-01-89	05-12-89	05-20-89	LE19A:ALL	LK04B(11-04-88)	LE19D2(05-19-89) ALL SPCC/CCC CRITERIA MET OTHER %D VALUES>20%: b2ClISOPROPETHER(29) HEXClBUT(23) 246TBP(26) ALL OTHERS <20%.	
EB-12	15928-26RE	04-30-89	05-12-89	05-20-89**	LE19A:CRITERIA MET			
EB-13	15928-27RE	05-01-89	05-12-89	05-23-89**	LE22B:ALL		LE22B::SS	
EB-14	15928-28RE	05-02-89	05-12-89	05-23-89**	LE22B:CRITERIA		LE22B::SS	
FB-2	15928-29RE	04-30-89	05-12-89	05-23-89**	LE22B:MET		LE22B::SS	

TABLE F-32. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR SEMIVOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Semivolatile Tuning/Mass Calibration	Initial Calibration Verification	Continuing Calibration Verification	Semivolatile Blank Analyses
METHOD BLANK:SBLKL8	B0515MSVWLO		05-15-89	05-18-89	LE18A	LK04B(11-04-88)	LE18A::SS(05-18-89	b2EthHexPhlt(2)
MW1-10	15928-40RE	04-30-89	05-15-89	05-18-89	LE18A		ALL SPCC/CCC	NO OTHER
MW1-11	15928-41RE	04-30-89	05-15-89	05-18-89	LE18A		CRITERIA MET	INTERFERENTS
MW1-12DUP	15928-43RE	04-30-89	05-15-89	05-18-89	LE18A		OTHER %D VALUES>20%:	DETECTED
							4ClANILINE(25)	
							HEXClBUT(23)	
							HEXClCYLPENTA(35)	
							4NITROPHENOL(21)	
							4NITROANILINE(21)	
							33DClBENZIDINE(27)	
							b2ETHHEXPHLT(28)	
							DIn8PHLT(20)	
							ALL OTHERS<20%.	
METHOD BLANK:SBLKL9	B0513MSVWLK		05-13-89	05-22-89	LE22B:ALL	LK04B(11-04-88)	LE22B::SS(05-22-89)	b2EthHexPhlt(1J)
MW1-1	15928-31RE	04-30-89	05-13-89	05-22-89**	LE22B:CRITERIA		ALL CCC/SPCC	NO OTHER
MW1-4DUP	15928-34RE	04-30-89	05-13-89	05-22-89**	LE22B:MET		CRITERIA MET	INTERFERENTS
							OTHER %D>20:	DETECTED
							b2CClETHYLVINYLETHER(31)	
							4-ClANILINE(22)	
							HEXClBUT(23)	
MW1-5	15928-35RE	04-30-89	05-13-89	05-22-89	LE22B		ALL OTHERS<20;	
MW1-6	15928-36RE	04-30-89	05-13-89	05-22-89	LE22B			
MW1-8	15928-38RE	04-30-89	05-13-89	05-22-89	LE22B			
MW1-9	15928-39RE	04-30-89	05-13-89	05-22-89	LE22B			

** Exceed CLP holding time limits set for water.

TABLE F-32. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR SEMIVOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Semivolatile Tuning/Mass Calibration	Initial Calibration Verification	Continuing Calibration Verification	Semivolatile Blank Analyses
METHOD BLANK:SBLKL10	B0427MSVSLI		04-27-89	05-26-89	LE26A:ALL CRITERIA	LK04B(1*-04-88)	LE26A::SS	NO
B1-1-15	15928-76	04-11-89	04-27-89*	05-26-89	MET		ALL SPCC/CCC	INTERFERENTS
							CRITERIA MET	DETECTED
							OTHER %D VALUES >20:	
							b2ClISOPROPETH(33)	
							2ClNAPH(21)	
							BUTBENZPHTHLT(25)	
							b2ETHHEXPHTHLT	
							DNOCTPHTHLT(20)	
B1-2-15	15928-78	04-13-89	04-27-89*	05-26-89	LE26A		I123cdPYR(22)	
B1-2-25	15928-79	04-13-89	04-27-89*	05-26-89	LE26A			
METHOD BLANK:SBLKL11	B0418MSVSLI		04-18-89	05-26-89	LE26A:ALL CRITERIA MET	LK04B(11-04-88)	LE26A::SS	NO
B1-1-25	15928-77	04-11-89	04-18-89	05-26-89			LE26A::SS	INTERFERENTS
								DETECTED
B1-1-25	15928-77MS	04-11-89	04-18-89	05-26-89			LE26A::SS	
B1-1-25	15928-77MSD	04-11-89	04-18-89	05-26-89			LE26A::SS	
METHOD BLANK:SBLKL12	B0506MSVSLG		05-06-89	05-30-89	LE30B:ALL	LK04B(11-04-88)	LE30B:::SS	NO
MW1-12-15	15928-108	04-27-89	05-06-89	05-30-89	LE30B:CRITERIA MET		ALL CCC/SPCC	INTERFERENTS
							CRITERIA MET	DETECTED
							OTHER %D VALUES>20:	
MW1-12-15	15928-108MS	04-27-89	05-06-89	05-30-89	LE30B		b2ClISOPROPETH(38)	
MW1-12-15	15928-108MSD	04-27-89	05-06-89	05-30-89	LE30B		4ClANILINE(20)	
MW1-12-15DUP	15928-109	04-27-89	05-06-89	05-31-89	LE30B		PYRENE(22)	
MW1-12-20	15928-110	04-27-89	05-06-89	05-31-89	LE30B		33DClBENZ(39)	
MW1-13-15	15928-111	04-27-89	05-06-89	05-31-89	LE30B		b2ETHHEXPHTHLT(29)	
MW1-13-20	15928-112	04-27-89	05-06-89	05-31-89	LE30B		I123cdPYR(31)	
							DiBENZahANTH(31)	
							BENZghiPERYL(30)	
							ALL OTHERS<20%.	

TABLE F-32. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR SEMIVOLATILE ORGANIC COMPOUNDS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Semivolatile Tuning/Mass Calibration	Initial Calibration Verification	Continuing Calibration Verification	Semivolatile Blank Analyses
MW1-14-15	15928-113	04-28-89	05-06-89	05-31-89	LE31A:ALL	LK04B(11-04-88)	LE31A::SS	
MW1-14-20	15928-114	04-28-89	05-06-89	05-31-89	LE31A:CRITERIA		ALL CCC/SPCC	
BK-2-15	15928-115	04-28-89	05-06-89	05-31-89	LE31A:MET		CRITERIA MET	
BK-2-20	15928-116	04-28-89	05-06-89	05-31-89	LE31A		OTHER %D VALUES>20:	
BK-2-25	15928-117	04-28-89	05-06-89	05-31-89	LE31A		2ClPHENOL(21)	
BK3-0.5	15928-118	04-28-89	05-06-89	05-31-89	LE31A		b2ClISOPROPETH(35)	
BK3-5	15928-119	04-28-89	05-06-89	05-31-89	LE31A		4ClANILINE(22)	
BK3-20	15928-120	04-28-89	05-06-89	06-01-89	LE31A		33DiClBENZ(43)	
							BENZOkFL(21)	
							I123cdPYR(27)	
							DiBENZahANTH(30)	
							BENZOghiPERYL(33)	
							ALL OTHERS <20.	
METHOD BLANK:SBLKL13	B0503MSVSLK		05-03-89	06-01-89	LE31A		LE31A::SS	NO INTERFERENTS
MW1-9-15	15928-101	04-25-89	05-03-89	06-01-89	LE31A		LE31A::SS	DETECTED
MW1-9-20	15928-102	04-25-89	05-03-89	06-01-89	LF01A:ALL		LF01A::SS	
MW1-10-15	15928-103	04-26-89	05-03-89	06-01-89	LF01A:CRITERIA	LK04B(11-04-88)	ALL CCC/SPCC	
MW1-10-15DUP	15928-104	04-26-89	05-03-89	06-01-89	LF01A:MET		CRITERIA MET	
MW1-10-20	15928-105	04-26-89	05-03-89	06-01-89	LF01A		OTHER %D VALUES>20:	
MW1-11-15	15928-106	04-26-89	05-03-89	06-01-89	LF01A		b2ClISOPROPETH(42)	
MW1-11-20	15928-107	04-26-89	05-03-89	06-01-89	LF01A		4ClANILINE(22)	
							BUTBENZPHTHLT(26)	
							33DiClBENZ(48)	
							b2ETHHEXPHTHLT)28)	
							DinOCTPHTHLT(23)	
							BENZObFLUOR(20.3)	
							I123cdPYR(23)	
							DiBENZahANTH(29)	
							BENZghiPERYL(27)	
							ALL OTHERS <20%.	
METHOD BLANK:SBLKL4	B0425MSVSLI		04-25-89	05-01-89	LE01B		LE01B::D2	NO
B3-2-0DUP	15928-83	04-14-89	04-25-89	05-27-89	LE26A		LE26A::SS	INTERFERENTS DETECTED
B3-1-0	15928-80	04-14-89	04-25-89	05-27-89	LE26A		LE26A::SS	
B3-3-0DUP	15928-85	04-14-89	04-25-89	06-01-89	LF01A		LF01A::SS	
B3-3-0DUP	15928-86	04-14-89	04-25-89	06-02-89	LF01A		LF01A::SS	
B3-3-2.5	15928-87	04-14-89	04-25-89	06-02-89	LF01A		LF01A::SS	
B3-5-0	15928-90	04-15-89	04-25-89	06-03-89	LF02A:ALL OK	LK04B(11-04-88)	LF02A::SS	
							ALL CCC/SPCC	
							CRITERIA MET	
							OTHER %D VALUES>20:	
							2ClPHENOL(21)	
							c22ClISOPROPETH(22)	
							24DiNO3PHENOL(22)	
							33DiClEBNZ(35)	
							DiNOCTPHTHLT(22)	
							ALL OTHERS<20%.	

TABLE F-32. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR SEMIVOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Semivolatile Tuning/Mass Calibration	Initial Calibration Verification	Continuing Calibration Verification	Semivolatile Blank Analyses
SW-1	8907065-18	07-26-89	07-27-89	08-03-89	LH02A		OTHER %D VALUES >20: biISOPROPYLAMINE(36) nNITROSOdinPROPYLAMINE(23) BENZOICACID(35) 4ClANILINE(31) HEXClCYLPENT(22) 24DiNO3PHENOL(31) 4NITROANILINE(25) ANILINE(51) ALL OTHER %Ds<20.	
SW-2	8907065-19	07-26-89	07-27-89	08-03-89	LH035:ALL CRITERIA		LH03A:08-03-89 ALL SPCC/CCC CRITERIA MET OTHER %D VALUES >20: biISOPROPYLAMINE(39) nNITROSOdinPROPYLAMINE(32) ISOPHORONE(20) BENZOICACID(33) 4ClANILINE(28) HEXClCYLPENT(23) 24DiNO3PHENOL(25) ANILINE(50) ALL OTHER %Ds<20.	
SW-3	8907065-20	07-26-89	07-27-89	08-03-89	LH035:MET			
METHOD BLANK (WATERS)	B0803MSVWLS		08-03-89	08-08-89	LH08A:ALL	LK04B(11-04-88)	LH08A:08-08-89 ALL SPCC/CCC CRITERIA MET OTHER %D VALUES >20: b2ClISOPROPYLAMINE(44) nNITROSOdinPROPYLAMINE(32) ISOPHORONE(23) BENZOICACID(25) 4ClANILINE(34) DiBENZahANTH(20) BENZghiPERL(24) ANILINE(51) 246TriBrPHENOL(22) ALL OTHER %Ds<20.	NN INTERFERENTS DETECTED
GW1-1	8907065-04RE	07-25-89	08-03-89	08-08-89	LH08A:CRITERIA			
GW1-3	8907065-05RE	07-25-89	08-03-89	08-08-89	LH08A:MET			
GW1-6	8907065-09RE	07-25-89	08-03-89	08-08-89	LH08A			
GW1-7	8907065-10RE	07-25-89	08-03-89	08-08-89	LH08A			
GW1-8	8907065-11RE	07-25-89	08-03-89	08-08-89	LH08A			

TABLE F-32. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR SEMIVOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Semivolatile Tuning/Mass Calibration	Initial Calibration Verification	Continuing Calibration Verification	Semivolatile Blank Analyses
GW1-11	8907065-14RE	07-25-89	08-03-89	08-09-89	LH09A:ALL		LH09A:08-09-89	
GW1-13	8907065-16RE	07-25-89	08-03-89	08-09-89	LH09A:CRITERIA		ALL SPCC/CCC	
GW1-14	8907065-17RE	07-25-89	08-03-89	08-09-89	LH09A:MET		CRITERIA MET	
							OTHER %D VALUES >20:	
							b2ClISOPROPYLAMINE(39)	
							ISOPHORONE(22)	
							9BENZOICACID(28)	
							4ClANILINE(35)	
							HEXClCYLPENT(23)	
							24DiNO3PHENOL(24)	
							4NITROANILINE(26)	
							BENZghiPERL(20)	
							ANILINE(54)	
							246TriBrPHENOL(22)	
							ALL OTHER %Ds<20.	

TABLE F-33. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR SEMIVOLATILE ORGANIC COMPOUNDS
AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

SAIC Sample Number	Laboratory Identification Number	Semivolatile Surrogate Recovery	Semivolatile MS/MSD Analyses	Significant Sample Results	Tentatively Identified Compounds
METHOD BLANK:SBLKL1	B0418MSVWLM	ALL SURROGATES			None Detected
EB-1	15928-01	WITHIN LIMITS		NO ANALYTES DETECTED	Total=21ug/L
EB-3	15928-03			NO ANALYTES DETECTED	Total=26ug/L
EB-4	15928-05			NO ANALYTES DETECTED	Total=14ug/L
EB-5	15928-06			NO ANALYTES DETECTED	Total=12ug/L
EB-6	15928-07			NO ANALYTES DETECTED	Total=34ug/L
EB-7	15928-08			NO ANALYTES DETECTED	Total=12ug/L
EB-7	15928-08MS		ALL WITHIN		
EB-7	15928-08MSD		LIMITS		
METHOD BLANK:SBLKL2	B0425MSVWLM	ALL SURROGATES			None Detected
FB-1	15928-10	WITHIN LIMITS		NO ANALYTES DETECTED	Total=31ug/L
METHOD BLANK:SBLKL3	B0428MSVWLO	ALL SURROGATES			None Detected
EB-8	15928-11	WITHIN LIMITS		NO ANALYTES DETECTED	Total=12ug/L
EB-9	15928-12			b2ETHHEXPHTHLT(48)	Total=11ug/L
METHOD BLANK:SBLKL5	B0503MSVWLG	ALL SURROGATES			None Detected
EB-10	15928-14	WITHIN LIMITS		NO ANALYTES DETECTED	None Detected
EB-10	15928-14MS		ALL WITHIN		
EB-10	15928-14MSD		LIMITS		
EB-11	15928-15			b2ETHHEXPHTHLT(28)	Total=27ug/L
SBLKL6A	B0503MSVWLH	TPH=33			None Detected
MW3-2	15928-21	PHL=0/2FP=2		b2ETHHEXPHTHLT(5)	None Detected
MW1-13	15928-18	PHL=0/2FP=0		b2ETHHEXPHTHLT(5)	None Detected
MW1-14	15928-19	PHL=1/2FP=3		b2ETHHEXPHTHLT(34),DiNOCTPHTHLT(2)	None Detected
MW3-1	15928-20	PHL=1/2FP=2		b2ETHHEXPHTHLT(21)	None Detected
MW3-2DUP	15928-22	PHL=0/2FP=1		b2ETHHEXPHTHLT(3)	None Detected
MW3-3	15928-23	PHL=1/2FP=2		b2ETHHEXPHTHLT(3)	None Detected
MW3-4	15928-24	PHL=1/2FP=2		b2ETHHEXPHTHLT(3)	None Detected

TABLE F-33. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR SEMIVOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Semivolatile Surrogate Recovery	Semivolatile MS/MSD Analyses	Significant Sample Results	Tentatively Identified Compounds
MW3-5	15928-25	PHL=8/2FP=12		b2ETHHEXPHTHLT(14)	Total=20ug/L
METHOD BLANK:SBLKL6	80504MSVWLG	ALL SURROGATES			None Detected
MW1-3	15928-32	WITHIN LIMITS		NAPHTH(14),2CH3NAPH(2) ACE(7),DiBENZFUR(3) FLUOR(6),PHEN(17) ANTH(7),FLUORANTH(20) PYR(22),BENZOaANTH(7) CHRYS(7),b2EHTHEXPHTHLT(44) BENZObFLUOR(6X) BENZOkFLUOR(6X) ALL OTHERS ND	Total=710ug/L
MW1-4	15928-33	ALL OK		NAPH(20),2CH3NAPH(6) ACE(2),FLUOR(2) PHEN(2),FLUORANTH(4) PYR(4),b2ETHHEXPHTHLT(27)	Total=920ug/L
MW1-5	15928-35	PHL/2FP=0/13P=9		b2ETHHEXPHTHLT(8)	None Detected
MW1-6	15928-36	PHL/2FP=0		b2ETHHEXPHTHLT(57)	None Detected
MW1-7	15928-37	ALL OK		24DiCH3PHNOL(2) b2ETHHEXPHTHLT(14)	Total=190ug/L
MW1-8	15928-38	PHL=9/2FP=13		NAPH(4),2CH3NAPH(6) b2EHTHEXPHTHLT(4)	Total=950ug/L
MW1-9	15928-39	PHL/2FP=0		b2EHTHEXPHTHLT(2)	None Detected

TABLE F-33. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR SEMIVOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Semivolatile Surrogate Recovery	Semivolatile MS/MSD Analyses	Significant Sample Results	Tentatively Identified Compounds
MW1-10	15928-40	PHL/2FP=0		b2ETHHEXPHTHLT(48)	None Detected
MW1-11	15928-41	PHL=0/2FP=1		DinBUTPHTHLT(4),b2ETHHEXPHTHLT(640)	None Detected
MW1-12	15928-42	ALL OK		NAPH(84),2CH3NAPH(48),b2ETHHEXPHTHLT(35)	Total=1700ug/L
METHOD BLANK:SBLKL7	80512MSVWLK	ALL OK			None Detected
MW1-13	15928-18RE	PHL/2FP=0/T3P=7		b2ETHHEXPHTHLT(7B)	None Detected
MW1-14	15928-19RE	PHL=0/2FP=1		b2ETHHEXPHTHLT(40B)	None Detected
MW3-1	15928-20RE	PHL=1/2FP=3		b2ETHHEXPHTHLT(3B)	None Detected
MW3-3	15928-23RE	PHL=0/2FP=1		b2ETHHEXPHTHLT(3B)	None Detected
MW3-3	15928-23MS	ALL OK	ALL WITHIN		
MW3-3	15928-23MSD	ALL OK	LIMITS		
MW3-2	15928-21RE	PHL=0/2FP=2		b2ETHHEXPHTHLT(3B)	Total=9ug/L
MW3-2	15928-22RE/DUP	PHL=1/2FP=3		b2ETHHEXPHTHLT(2B)	Total=10ug/L
MW3-4	15928-24RE	PHL=1/2FP=3		b2ETHHEXPHTHLT(14B)	Total=9ug/L
MW3-5	15928-25RE	PHL=6/2FP=8		b2ETHHEXPHTHLT(17B)	None Detected
EB-12	15928-26RE	ALL OK		b2ETHHEXPHTHLT(38B)	Total=24ug/L
EB-13	15928-27RE	ALL OK		NO ANALYTES DETECTED	Total=23ug/L
EB-14	15928-28RE	ALL OK		NO ANALYTES DETECTED	Total=24ug/L
FB-2	15928-29RE	ALL OK		NO ANALYTES DETECTED	Total=13ug/L

TABLE F-33. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR SEMIVOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Semivolatile Surrogate Recovery	Semivolatile MS/MSD analyses	Significant Sample Results	Tentatively Identified Compounds
METHOD BLANK:SBLKL8	B0515MSVWLQ	ALL OK			None Detected
MW1-10	15928-40RE	PHL=1/2FP=3		b2ETHHEXPHTHLT(48B)	None Detected
MW1-11	15928-41RE	PHL=2/2FP=5		b2ETHHEXPHTHLT(17B)	None Detected
MW1-12DUP	15928-43RE	2FP=19		NAPH(72),2CH3NAPH(46),b2ETHHEXPHTHLT(19B)	Total=1400ug/L
METHOD BLANK:SBLKL9	B0513MSVWLK	ALL OK			None Detected
MW1-1	15928-31RE	ALL OK		b2ETHHEXPHTHLT(5B)	None Detected
MW1-4DUP	15928-34RE	2FP=20		24DiCH3PHENOL(5) NAPH(14),2CH3NAPH(4), ACE(2),FLUOR(2) FLUORANTH(3),PYR(3)	Total=710ug/L
MW1-5	15928-35RE	PHL/2FP=0/TPH=28/TBP=2		b2ETHHEXPHTHLT(3B)	Total=11ug/L
MW1-6	15928-36RE	PHL/2FP=1/TBP=7		b2ETHHEXPHTHLT(12B)	Total=11ug/L
MW1-8	15928-38RE	PHL=0/2FP=5		b2ETHHEXPHTHLT(2B)	Total=710ug/L
MW1-9	15928-39RE	PHL=8/2FP=14		b2ETHHEXPHTHLT(2B)	Total=9ug/L
METHOD BLANK:SBLKL10	B0427MSVSL1	ALL SURROGATES			Total=4470ug/kg
B1-1-15	15928-76	WITHIN LIMITS		NAPH(89),2CH3NAPH(260),ACE(250) DIBENZOFURAN(130),FLUOR(300) PHEN(1900),ANTHR(490),FLUORANTH(1500) PYR(1600),BENZaANTH(690),CHRYS(640) b2ETHHEXPHTHL(48),BENZbFLUOR(450) BENZkFLUOR(370),BENZaPYR(460) IND123cdPYR(220),BENZghiPERYL(180)	Total=17990ug/Kg
B1-2-15	15928-78			NAPH(330),2CH3NAPH(600),ACE(77) DIBENZOFURAN(46),FLUOR(81),PHEN(360) ANTH(110),FLUORANTH(360),PYR(530) BENZaANT(150),CHRYS(180),b2EHTHEXPHTHLT(94), BENZbFLUOR(160),BENZkFLUOR(100),BENZaPYR(140) IND123cdPYR(71J),BENZghiPERL(58J)	Total=24400ug/Kg
B1-2-25	15928-79			NAPH(650),2CH3NAPH(900),ACE(130) DIBENZOFURAN(81),FLUOR(150),PHEN(630) ANTH(210),DinBUTPHTHLT(9J),FLUOR(690) PYR(770),BENZaANTH(330),CHRYS(320) b2ETHHEXPHTHLT(130),BENZbFLUOR(250) BENZkFLUOR(160),BENZaPYR(230),IND123cdPYR(120) BENghiPERL(98)	Total=43900ug/Kg

TABLE F-33. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR SEMIVOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Semivolatile Surrogate Recovery	Semivolatile MS/MSD Analyses	Significant Sample Results	Tentatively Identified Compounds
METHOD BLANK:SBLKL11	B0418MSVSLI	ALL SURROGATES			Total=4190ug/Kg
B1-1-25	15928-77	WITHIN LIMITS		NAPH(37J),2CH3NAPH(62),ACE(74) DIBENZOFURAN(45),FLUOR(99),PHEN(650) ANTH(170),FLUOR(430),PYR(510) BENZaANTH(220),CHRYS(220),b2ETHHEXPHTHLT(63B) BENZbFLUOR(170),BENZkFLUOR(110),BENZaPYR(170) IND123cdPYR(75J),BENZghiPERL(62J)	Total=9110ug/Kg
B1-1-25	15928-77MS		ALL WITHIN LIMITS		
B1-1-25	15928-77MSD				
METHOD BLANK:SBLKL12	B0506MSVSLG	ALL SURROGATES			Total=6690ug/Kg
MW1-12-15	15928-108	WITHIN LIMITS		NAPH(300),2CH3NAPH(820),DIBENZOFURAN(17J) FLUOR(43),b2ETHHEXPHTHLT(24J)	Total=28320ug/Kg
MW1-12-15	15928-108MS		ALL WITHIN LIMITS		
MW1-12-15	15928-108MSD				
MW1-12-15DUP	15928-109			2CH3NAPH(110),DiCH3PHTHLT(14J)	Total=11110ug/Kg
MW1-12-20	15928-110			NO ANALYTES DETECTED	Total=6800ug/Kg
MW1-13-15	15928-111			NO ANALYTES DETECTED	Total=6550ug/Kg
MW1-13-20	15928-112			NO ANALYTES DETECTED	Total=6740ug/Kg
MW1-14-15	15928-113			NO ANALYTES DETECTED	Total=7320ug/Kg
MW1-14-20	15928-114			NO ANALYTES DETECTED	Total=6560ug/Kg
BK-2-15	15928-115			NO ANALYTES DETECTED	Total=5670ug/Kg
BK-2-20	15928-116			NO ANALYTES DETECTED	Total=6080ug/Kg
BK-2-25	15928-117			NO ANALYTES DETECTED	Total=5890ug/Kg
BK3-0.5	15928-118			NO ANALYTES DETECTED	Total=9680ug/Kg
BK3-5	15928-119			NO ANALYTES DETECTED	Total=5820ug/Kg
BK3-20	15928-120			b2EHTHEXPHTHLT(52)	Total=5580ug/Kg
METHOD BLANK:SBLKL13	B0503MSVSLK	ALL SURROGATES			Total=4620ug/kg
MW1-9-15	15928-101	WITHIN LIMITS		NO ANALYTES DETECTED	Total=6100ug/Kg
MW1-9-20	15928-102			b2ETHHEXPHTHLT(39)	Total=6180ug/Kg
MW1-10-15	15928-103			NO ANALYTES DETECTED((b2ETHHEXPHTHLT=34J)	Total=6450ug/Kg
MW1-10-15DUP	15928-104			b2ETHHEXPHTHLT(40)	Total=7380ug/Kg
MW1-10-20	15928-105			NO ANALYTES DETECTED	Total=6700ug/Kg
MW1-11-15	15928-106			NO ANALYTES DETECTED	Total=5990ug/Kg
MW1-11-20	15928-107			NO ANALYTES DETECTED	Total=8550ug/Kg

TABLE F-33. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR SEMIVOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Semivolatile Surrogate Recovery	Semivolatile MS/MSD Analyses	Significant Sample Results	Tentatively Identified Compounds
METHOD BLANK:SBLKL4	B0425MSVSLI	ALL OTHER			Total=5390ug/Kg
B3-2-0DUP	15928-83	SURROGATES		PHENOL(49),PYR(25J),b3ETHHEXPHTHLT(100B)	Total=31000ug/Kg
		WITHIN		BENZbFLUOR(31JX),BENZkFLUOR(31JX)	
B3-1-0	15928-80	LIMITS		NAPH(170),2CH3NAPH(38J)	Total=55000ug/Kg
B3-3-0DUP	15928-85			NAPH(390J)	Total=460000ug/Kg
B3-3-0DUP	15928-86			NAPH(750J),2CHENAPH(180J)	Total=520000ug/Kg
B3-3-2.5	15928-87	NBZ=130		NAPH(2400),2CHENAPH(350J)	Total=640000ug/Kg
B3-5-0	15928-90			FLUOR(83),PYR(200),BENZaANTH(180) CHRYS(230),BENZbFLUOR(220),BENZkFLUOR(260) BENZaPYR(330),IND123cdPYR(180) BENZghiPERL(170)	Total=17000ug/Kg
MW1-6-15DUP	15928-95			b2ETHHEXPHTHLT(50B)	Total=6630ug/Kg
MW1-6-15DUP	15928-95MS		ALL WITHIN LIMITS		
MW1-6-15DUP	15928-95MSD				
MW1-8-20	15928-100			b2ETHHEXPHTHLT(58B)	Total=10900ug/Kg
B3-1-5	15928-81			4CH3PHENOL(230),NAPH(700),2CH3NAPH(63)	Total=27000ug/Kg
B3-2-5	15928-84			b2ETHHEXPHTHLT(49B)	Total=14000ug/Kg
B3-4-5	15928-89			b2ETHHEXPHTHLT(51B)	Total=12000ug/Kg
B3-5-2.5	15928-91			b2ETHHEXPHTHLT(50B)	Total=13000ug/Kg
MW1-5-15	15928-92			b2ETHHEXPHTHLT(58B)	Total=5450ug/Kg
MW1-5-20	15928-93			b2ETHHEXPHTHLT(70B)	Total=5550ug/Kg
MW1-6-15	15928-94			b2ETHHEXPHTHLT(56B)	Total=5760ug/Kg
B3-2-0	15928-82			b2ETHHEXPHTHLT(85B)	Total=28000ug/Kg
B3-2-0	15928-82MS		ALL WITHIN LIMITS		
B3-2-0	15928-82MSD				
MW1-6-20	15928-96			b2ETHHEXPHTHLT(59B)	Total=5990ug/Kg
MW1-7-15	15928-97			b2ETHHEXPHTHLT(62B)	Total=5750ug/Kg
MW1-7-20	15928-98			b2ETHHEXPHTHLT(56B)	Total=6050ug/Kg
MW1-8-15	15928-99			b2ETHHEXPHTHLT(53B)	Total=29210ug/Kg
B3-4-0	15928-88			b2ETHHEXPHTHLT(80B)	Total=13000ug/Kg

TABLE F-33. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR SEMIVOLATILE ORGANIC COMPOUNDS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Identification Number	Semivolatile Surrogate Recovery	Semivolatile MS/MSD Analyses	Significant Sample Results	Tentatively Identified Compounds
METHOD BLANK (WATERS)	B0727MSVWL0	ALL		NONE DETECTED	NONE DETECTED
FB-3	8907065-02	OTHER		NONE DETECTED	NONE DETECTED
FB-3MS	8907065-02MS	SURROGATES	ALL WITHIN		
FB-3MSD	8907065-02MSD	WITHIN	LIMITS		
EB-3	8907065-03	LIMITS		DiEHTPHTHLT(3)/b2ETHHECPHTHLT(2)	TOTAL=39ug/L
GW1-4	8907065-06			NAPH(18)/ACE(2)/FLUOR(2)/FLUORANTH(4) PYR(4)/BENZ(a)ANTH(2)/CHRYS(2) b2ETHHEXPHTHLT(17)/2METHNAPH(5)	TOTAL=800ug/L
GW1-4D	8907065-07	2FP(13)		NAPH(18)/ACE(2)/FLUOR(2)/FLUORANTH(3) b2ETHHEXPHTHLT(17)/2METHNAPH(5)/PYR(3)	TOTAL=820ug/L
GW1-5	8907065-08	2FP(0),D5P(0),2BP(3)		b2ETHHEXPHTHLT(6)	NONE DETECTED
GW1-10	8907065-12	2FP(0),D5P(0),2BP(4)		NONE DETECTED	NONE DETECTED
GW1-10D	8907065-13	2FP(0),D5P(0),2BP(10)		b2ETHHEXPHTHLT(3)	NONE DETECTED
GW1-12	8907065-15			NAPH(35)/b2ETHHEXPHTHLT(4)/2CH3NAPH(21)	TOTAL=890ug/L
SW-1	8907065-18			b2ETHHEXPHTHLT(3)	
SW-2	8907065-19			b2ETHHEXPHTHLT(11)	NONE DETECTED
SW-3	8907065-20			b2ETHHEXPHTHLT(4)	NONE DETECTED
METHOD BLANK (WATERS)	B0803MSVWLS			NONE DETECTED	NONE DETECTED
GW1-1	8907065-04RE			b2ETHHEXPHTHLT(3)	NONE DETECTED
GW1-3	8907065-05RE	2FP(18)		NAPH(11)/ACE(7)/DIBENZOFURAN(3)/FLUOR(6) PHEN(9)/ANTH(4)/FLUORANTH(10)/PYR(9) BENZ(a)ANTH(2)/CHRYS(2)/b2ETHHEXPHTHLT(3)	TOTAL=360ug/L
GW1-6	8907065-09RE	ALL		NONE DETECTED	NONE DETECTED
GW1-7	8907065-10RE	OTHER SURROGATES		NONE DETECTED	NONE DETECTED
GW1-8	8907065-11RE	WITHIN		NONE DETECTED	TOTAL=280ug/L
GW1-11	8907065-14RE	LIMITS		NONE DETECTED	TOTAL = 26ug/L
GW1-13	8907065-16RE	2FP(14)		b2ETHHEXPHTHLT(2)	NONE DETECTED
GW1-14	8907065-17RE			b2ETHHEXPHTHLT(43)	NONE DETECTED

TABLE F-34. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR MISCELLANEOUS INORGANICS/ORGANICS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA

SAIC Sample Number	Laboratory Sample Number	Date Sample Collected	Holding Time Evaluation(a)	Initial Calibration(b)	Continuing Calibration(b)	Initial Calibration Blanks
WATER						
EB-1	15928-1	4/11/89	TPH-54 DAYS	ALL WITHIN LIMITS	ALL WITHIN LIMITS	ALL ELEMENTS UNDETECTED
EB-3	15928-3	4/13/89	TPH-53 DAYS			
EB-4	15928-5	4/14/89	TPH-49 DAYS			
EB-5	15928-6	4/15/89	TPH-49 DAYS			
EB-6	15928-7	4/16/89	TPH-49 DAYS			
EB-7	15928-8	4/16/89	TPH-49 DAYS			
FB-1	15928-10	4/19/89	TPH-47 DAYS			
EB-8	15928-11	4/25/89	TPH-40 DAYS			
EB-9	15928-12	4/26/89	TPH-40 DAYS			
EB-10	15928-14	4/27/89	TPH-36 DAYS			
EB-11	15928-15	4/28/89	TPH-36 DAYS			
MW1-13	15928-18	4/30/89	TPH-33 DAYS			
MW1-14	15928-19	4/30/89	TPH-33 DAYS			
MW3-1	15928-20	5/01/89	TPH-33 DAYS			
MW3-2	15928-21	5/01/89	TPH-33 DAYS			
MW3-2DUP	15928-22	5/01/89	TPH-33 DAYS			
MW3-3	15928-23	5/02/89	TPH-33 DAYS			
MW3-4	15928-24	5/02/89	TPH-33 DAYS			
MW3-5	15928-25	5/01/89	TPH-33 DAYS			
EB-12	15928-26	4/30/89	TPH-33 DAYS			
EB-13	15928-27	5/01/89	TPH-33 DAYS			
EB-14	15928-28	5/02/89	TPH-33 DAYS			
FB-2	15928-29	5/03/89	TPH-33 DAYS			
MW1-1	15928-31	4/30/89	SULFATE - NF CHLORIDE - 37 DAYS NITRATE - 37 DAYS BICARBONATE ALKALINITY - 41 DAYS CARBONATE ALKALINITY - 41 DAYS TOTAL ALKALINITY - 41 DAYS pH - 3 DAYS TPH - 34 DAYS			
MW1-3	15928-32	4/30/89	SULFATE - 37 DAYS CHLORIDE - 37 DAYS BICARBONATE ALKALINITY - 31 DAYS CARBONATE ALKALINITY - 31 DAYS TOTAL ALKALINITY - 31 DAYS pH - 3 DAYS TPH - 37 DAYS			

TABLE F-34. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR MISCELLANEOUS INORGANICS/ORGANICS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Sample Number	Date Sample Collected	Holding Time Evaluation(a)	Initial Calibration(b)	Continuing Calibration(b)	Initial Calibration Blanks
MW1-4	15928-33	4/30/89	TPH - 34 DAYS			
MW1-4DUP	15928-34	4/30/89	TPH - 34 DAYS			
MW1-5	15928-35	4/30/89	TPH - 34 DAYS			
MW1-6	15928-36	4/30/89	TPH - 34 DAYS			
MW1-7	15928-37	4/30/89	TPH - 34 DAYS			
MW1-8	15928-38	4/30/89	TPH - 34 DAYS			
MW1-9	15928-39	4/30/89	TPH - 34 DAYS			
MW1-10	15928-40	4/30/89	TPH - 34 DAYS			
MW1-11	15928-41	4/30/89	TPH - 34 DAYS			
MW1-12	15928-42	4/30/89	TPH - 34 DAYS			
MW1-12DUP	15928-43	4/30/89	TPH - 34 DAYS			
SOILS						
B1-1-15	15928-76	4/11/89	TOC - 56 DAYS	TOC WITHIN LIMITS	TPH %R = 112/104	1. TOC <0.1%
B1-1-25	15928-77	4/11/89	TOC - 34 DAYS			2. TOC 0.3%
B1-2-15	15928-78	4/13/89	TPH - 53 DAYS TOC - 31 DAYS	TPH %R = 128/104		TPH <0.5mg/kg
B1-2-25	15928-79	4/13/89	TPH - 53 DAYS TOC - 52 DAYS			
B3-1-0	15928-80	4/14/89	TPH - 53 DAYS TOC - 52 DAYS			
B3-1-5	15928-81	4/14/89	TPH - 53 DAYS			
B3-2-0	15928-82	4/14/89	TPH - 53 DAYS			
B3-2-0DUP	15928-83	4/14/89	TPH - 53 DAYS			
B3-3-0DUP	15928-85	4/14/89	TPH - 53 DAYS			
B3-3-0DUP	15928-86	4/14/89	TPH - 53 DAYS			
B3-3-2.5	15928-87	4/14/89	TPH - 53 DAYS TOC - 28 DAYS			
B3-4-0	15928-88	4/15/89	TOC - 30 DAYS			
B3-4-5	15928-89	4/15/89	ALL OK			
B3-5-0	15928-90	4/15/89	ALL OK			
B3-5-2.5	15928-91	4/15/89	TPH - 53 DAYS TOC - 52 DAYS			
MW1-5-15	15928-92	4/16/89	TOC - 29 DAYS			
MW1-5-20	15928-93	4/16/89	ALL OK			
MW1-6-15	15928-94	4/16/89	ALL OK			
MW1-6-15DUP	15928-95	4/16/89	ALL OK			
MW1-6-20	15928-96	4/16/89	TOC - 51 DAYS			
MW1-7-15	15928-97	4/17/89	TOC - 50 DAYS			

TABLE F-34. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR MISCELLANEOUS INORGANICS/ORGANICS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Sample Number	Date Sample Collected	Holding Time Evaluation(a)	Initial Calibration(b)	Continuing Calibration(b)	Initial Calibration Blanks
MW1-7-20	15928-98	4/17/89	ALL OK			
MW1-8-15	15928-99	4/17/89	ALL OK			
MW1-8-20	15928-100	4/17/89	TOC - 28 DAYS			
MW1-9-15	15928-101	4/25/89	ALL OK			
MW1-9-20	15928-102	4/25/89	TOC - 28 DAYS			
MW1-10-15	15928-103	4/26/89	ALL OK			
MW1-10-15DUP	15928-104	4/26/89	ALL OK			
MW1-10-20	15928-105	4/26/89	TOC - 19 DAYS			
MW1-11-15	15928-106	4/26/89	TPH - 41 DAYS			
MW1-11-20	15928-107	4/26/89	TPH - 42 DAYS TOC - 41 DAYS			
MW1-12-15	15928-108	4/27/89	TPH - 37 DAYS			
MW1-12-15DUP	15928-109	4/27/89	TPH - 37 DAYS			
MW1-12-20	15928-110	4/27/89	TPH - 37 DAYS TOC - 35 DAYS			
MW1-13-15	15928-111	4/27/89	ALL OK			
MW1-13-20	15928-112	4/27/89	TPH - 37 DAYS			
MW1-14-15	15928-113	4/28/89	TPH - 37 DAYS			
MW1-14-20	15928-114	4/28/89	TPH - 37 DAYS			
BK-2-15	15928-115	4/28/89	TPH - 37 DAYS TOC - 39 DAYS			
BK-2-20	15928-116	4/28/89	TOC - 39 DAYS			
BK-2-25	15928-117	4/28/89	TPH - 40 DAYS TOC - 17 DAYS			
BK3-0.5	15928-118	4/28/89	TOC - 39 DAYS			
BK3-5	15928-119	4/28/89	TOC - 39 DAYS TOC - 38 DAYS			
BK3-20	15928-120	4/28/89	TOC - 17 DAYS			
FB-3	17709-02	07/25/89	ALL OK	NO INITIAL CALIBRATION VERIFICATION CONDUCTED	ALL WITHIN LIMITS	NO INTERFERENTS DETECTED
EB-15	17709-03	07/25/89	ALL OK			
GW1-1	17709-04	07/25/89	ALL OK			
GW1-3	17709-05	07/25/89	ALL OK			
GW1-4	17709-06	07/25/89	ALL OK			
GW1-4D	17709-07	07/25/89	ALL OK			
GW1-5	17709-08	07/25/89	ALL OK			
GW1-6	17709-09	07/25/89	ALL OK			
GW1-7	17709-10	07/25/89	ALL OK			
GW1-8	17709-11	07/25/89	ALL OK			
GW1-10	17709-12	07/25/89	ALL OK			
GW1-10D	17709-13	07/25/89	ALL OK			
GW1-11	17709-14	07/25/89	ALL OK			
GW1-12	17709-15	07/25/89	ALL OK			
GW1-13	17709-16	07/25/89	ALL OK			
GW1-14	17709-17	07/25/89	ALL OK			
SW-1	17709-18	07/26/89	ALL OK			
SW-2	17709-19	07/26/89	ALL OK			
SW-3	17709-20	07/26/89	ALL OK			

(a)Holding times
Metals(suspended and dissolved)-6 months
Mercury (total and dissolved)-28 days
Alkalinity - 24 hours
Chloride -28 days
TPH-28 days
TOC - 28 days
TDS - 7 days
TSS - 7 days
Sulfate - 28 days
Nitrate - 24 hours

TABLE F-34. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR MISCELLANEOUS INORGANICS/ORGANICS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Sample Number	Continuing Calibration Blanks	Procedural Blanks	Method Blank Spikes(c)	MS/MSD Results(d)	Spiked Sample Results(e)	Duplicate Results(f)	Significant Sample Results
WATER								
EB-1	15928-1	ALL ELEMENTS	1. TPH 1.1mg/L	TPH WITHIN				NOT ANALYZED
EB-3	15928-3	UNDETECTED	2. TPH 0.7mg/L	LIMITS				NOT ANALYZED
EB-4	15928-5		3. UNDETECTED					NOT ANALYZED
EB-5	15928-6		ALL OTHERS					NOT ANALYZED
EB-6	15928-7		UNDETECTED					NOT ANALYZED
EB-7	15928-8							NOT ANALYZED
FB-1	15928-10							NOT ANALYZED
EB-8	15928-11							NOT ANALYZED
EB-9	15928-12							NOT ANALYZED
EB-10	15928-14							NOT ANALYZED
EB-11	15928-15							NOT ANALYZED
MW1-13	15928-18							TPH-ND
MW1-14	15928-19				TPH WITHIN LIMITS		TPH UNDETECTED	TPH-ND
MW3-1	15928-20							TPH-ND
MW3-2	15928-21				TPH WITHIN LIMITS			TPH-ND
MW3-2DUP	15928-22						TPH UNDETECTED	TPH-ND
MW3-3	15928-23							TPH-ND
MW3-4	15928-24							TPH-ND
MW3-5	15928-25							TPH-ND
EB-12	15928-26							TPH-ND
EB-13	15928-27							TPH-ND
EB-14	15928-28							TPH-ND
FB-2	15928-29				TPH WITHIN LIMITS			TPH-ND
MW1-1	15928-31					CHLORIDE NITRATE SULFATE ALKALINITY ALL WITHIN LIMITS		SULFATE 59 mg/Kg CHLORIDE 15 mg/L NITRATE 0.3 mg/L TDS 460 mg/L TSS 52 mg/L TOTAL ALKALINITY 420 mg/L BICARBONATE ALKALINITY 420 mg/L CARBONATE ALKALINITY-ND pH = 6.9
MW1-3	15928-32					TSS RPD=3.0 TDS RPD=1.5		TPH 1.4ug/L SULFATE 110 mg/L CHLORIDE 34 mg/L TDS 670 mg/L TSS 340 mg/L TOTAL ALKALINITY 420 mg/L BICARBONATE ALKALINITY 420 mg/L CARBONATE ALKALINITY-ND pH = 6.9

TABLE F-34. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR MISCELLANEOUS INORGANICS/ORGANICS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Sample Number	Continuing Calibration Blanks	Procedural Blanks	Method Blank Spikes(c)	MS/MSD Results(d)	Spiked Sample Results(e)	Duplicate Results(f)	Significant Sample Results
MW1-4	15928-33						RPD=36%	TPH 3.3 ug/L
MW1-4DUP	15928-34							TPH 2.3 ug/L
MW1-5	15928-35							TPH=ND
MW1-6	15928-36							TPH=ND
MW1-7	15928-37							TPH 0.6 ug/L
MW1-8	15928-38							TPH 1.1 ug/L
MW1-9	15928-39							TPH=ND
MW1-10	15928-40							TPH=ND
MW1-11	15928-41							TPH=ND
MW1-12	15928-42							TPH 2.2 ug/L
MW1-12DUP	15928-43							TPH 2.0 ug/L
SOILS								
B1-1-15	15928-76	1. TOC 0.2%	TPH <20mg/kg	TPH WITHIN LIMITS				TOC 0.4% (DB)
B1-1-25	15928-77	2. TOC 0.1%/0.1%						TOC 1.1% (DB)
B1-2-15	15928-78	TPH <0.5mg/kg						TPH 21 mg/kg
								TOC 0.9% (DB)
B1-2-25	15928-79							TPH 37 mg/kg
								TOC 1.1% (DB)
B3-1-0	15928-80							TPH 120 mg/kg
								TOC 1.7% (DB)
B3-1-5	15928-81							TPH 30 mg/kg
B3-2-0	15928-82							TPH 59 mg/kg
B3-2-0DUP	15928-83							TPH 96 mg/kg
B3-3-0DUP	15928-85				TPH %R = 145/143			TPH 34 mg/kg
B3-3-0DUP	15928-86							TPH 130 mg/kg
B3-3-2.5	15928-87							TPH 110 mg/kg
								TOC 1.4% (DB)
B3-4-0	15928-88							TOC 2.4% (DB)
B3-4-5	15928-89							
B3-5-0	15928-90							TPH 79 mg/kg
								TOC 2.0% (DB)
P?-5-2.5	15928-91						RPD = 0.6	TPH 25 mg/kg
								TOC 2.2% (DB)
MW1-5-15	15928-92				TPH %R = 136/133		TPH WITHIN LIMITS	TOC 1.6% (DB)
MW1-5-20	15928-93							
MW1-6-15	15928-94							
MW1-6-15DUP	15928-95							
MW1-6-20	15928-96							TOC 1.6% (DB)
MW1-7-15	15928-97				TOC WITHIN LIMITS			TOC 1.6% (DB)

TABLE F-34. LABORATORY QUALITY CONTROL CHECK SAMPLE RESULTS FOR MISCELLANEOUS INORGANICS/ORGANICS AT SOUTH DAKOTA AIR NATIONAL GUARD, JOE FOSS FIELD, SIOUX FALLS, SOUTH DAKOTA (CONTINUED)

SAIC Sample Number	Laboratory Sample Number	Continuing Calibration Blanks	Procedural Blanks	Method Blank Spikes(c)	MS/MSD Results(d)	Spiked Sample Results(e)	Duplicate Results(f)	Significant Sample Results
MW1-7-20	15928-98							
MW1-8-15	15928-99							
MW1-8-20	15928-100						RPD = 0.1	TOC 1.1% (DB)
MW1-9-15	15928-101							
MW1-9-20	15928-102							TOC 1.5% (DB)
MW1-10-15	15928-103							
MW1-10-15DU	15928-104							
MW1-10-20	15928-105							TOC 0.9% (DB)
MW1-11-15	15928-106							TPH 34 mg/kg
MW1-11-20	15928-107							TPH 190 mg/kg TOC 1.1% (DB)
MW1-12-15	15928-108							TPH 730 mg/kg
MW1-12-15DU	15928-109							TPH 470 mg/kg
MW1-12-20	15928-110							TPH 46 mg/kg TOC 1.5% (DB)
MW1-13-15	15928-111				TPH %R = 127/159		TPH WITHIN LIMITS	
MW1-13-20	15928-112							TPH 270 mg/kg
MW1-14-15	15928-113							TPH 600 mg/kg
MW1-14-20	15928-114							TPH 160 mg/kg
BK-2-15	15928-115						RPD = 0.2	TPH 970 mg/kg TOC 1.2% (DB)
BK-2-20	15928-116				TOC WITHIN LIMITS			TOC 1.4% (DB)
BK-2-25	15928-117							TPH 31 mg/kg TOC 0.9% (DB)
BK3-0.5	15928-118							TOC 2.3% (DB)
BK3-5	15928-119							TPH 86 mg/kg TOC 0.9% (DB)
BK3-20	15928-120				TPH %R = 134/116		TPH WITHIN LIMITS	TOC 1.1% (DB)
FB-3	17709-02	NO INTERFERENTS DETECTED IN 3 BLANKS	NO INTERFERENTS DETECTED	NO BLNAK SPIKES CONDUCTED	ALL WITHIN LIMITS	NONE CONDUCTED		TPH-ND
EB-15	17709-03							TPH-ND
GW1-1	17709-04							TPH-ND
GW1-3	17709-05							TPH=0.8 ug/L
GW1-4	17709-06							TPH=1.3 ug/L
GW1-4D	17709-07						RPD= 51%	TPH=2.2 ug/L
GW1-5	17709-08							TPH-ND
GW1-6	17709-09							TPH-ND
GW1-7	17709-10							TPH-ND
GW1-8	17709-11							TPH-ND
GW1-10	17709-12							TPH-ND
GW1-10D	17709-13						BOTH REPLICATES ND	TPH-ND
GW1-11	17709-14				ALL WITHIN LIMITS			TPH-ND
GW1-12	17709-15							TPH=1.2 ug/L-ND
GW1-13	17709-16							TPH-ND
GW1-14	17709-17							TPH-ND
SW-1	17709-18							TPH-ND
SW-2	17709-19							TPH-ND
SW-3	17709-20							TPH-ND

(c)TPH Control Limits-82-114%
(d)TPH Control Limits-82-114%
(e)Control limits (%R)

Analyte	Control Limits
Chloride	71-133
Nitrate	77-126
Sulfate	66-129
Alkalinity	76-114

(f)TPH Duplicate Control Limits: Soil (0-13% RPD)
Water (0-11%RPD)

APPENDIX G:

AQUIFIER TEST DATA AND ANALYSES

AQUIFER TEST ANALYSIS

INTRODUCTION

An aquifer test was performed at Joe Foss Field in July, 1989. The purpose of this test was to accurately define the properties of the surficial aquifer underlying Site 1 - Underground Fuel Storage Area. Figure 1 illustrates the configuration of the test and observation wells and gives the applicable physical data of the aquifer and the test wells.

Preliminary calculations (Table 1) were performed to predict the impact of the aquifer system characteristics under specified testing parameters. The effects of the following items were estimated:

1) Production well storage

2) Partial penetration of test wells with aquifer stratification

3) Water table decline with delayed gravity yield

These calculations showed that item 1 was neglible given the specified testing parameters. The effect of item 2 was limited to early drawdown data from the pumping well and would not effect the more important observation well data. The effect of item 3 had to be corrected for early time drawdown data within the observation wells.

The effects of municipal well pumpage or aquifer system boundaries (Big Sioux River, Diversion Channel, pinching out of aquifer to the south) were not assessed during this aquifer testing. As can be derived by the calculation in Table 1, over 8 days of pumping would have been necessary under the specified test parameters to begin noticing their effects on test data.

Prior to testing, antecedent water level trends were monitored for a 24 hour period. No significant trends were noted during this monitoring which would effect test results.

Tests were performed throughout a 4 day period commencing July 27, 1989. Equipment and flow rates were constantly monitored to ensure the maintenance of the defined testing parameters. Water levels were recorded using a Hermit data logger fitted with low range transducers capable of detecting head changes of less than 0.02 feet.

The drawdown vs. time results for only one test and well are presented in Figure 2. The first step in the analysis was to plot these results on logarithmically scaled graph paper. The pumping well data proved to be unusable which is often the case due to turbulance within the well. Plotted data was then matched to a type curve developed by Theis (1935) and the match points of the

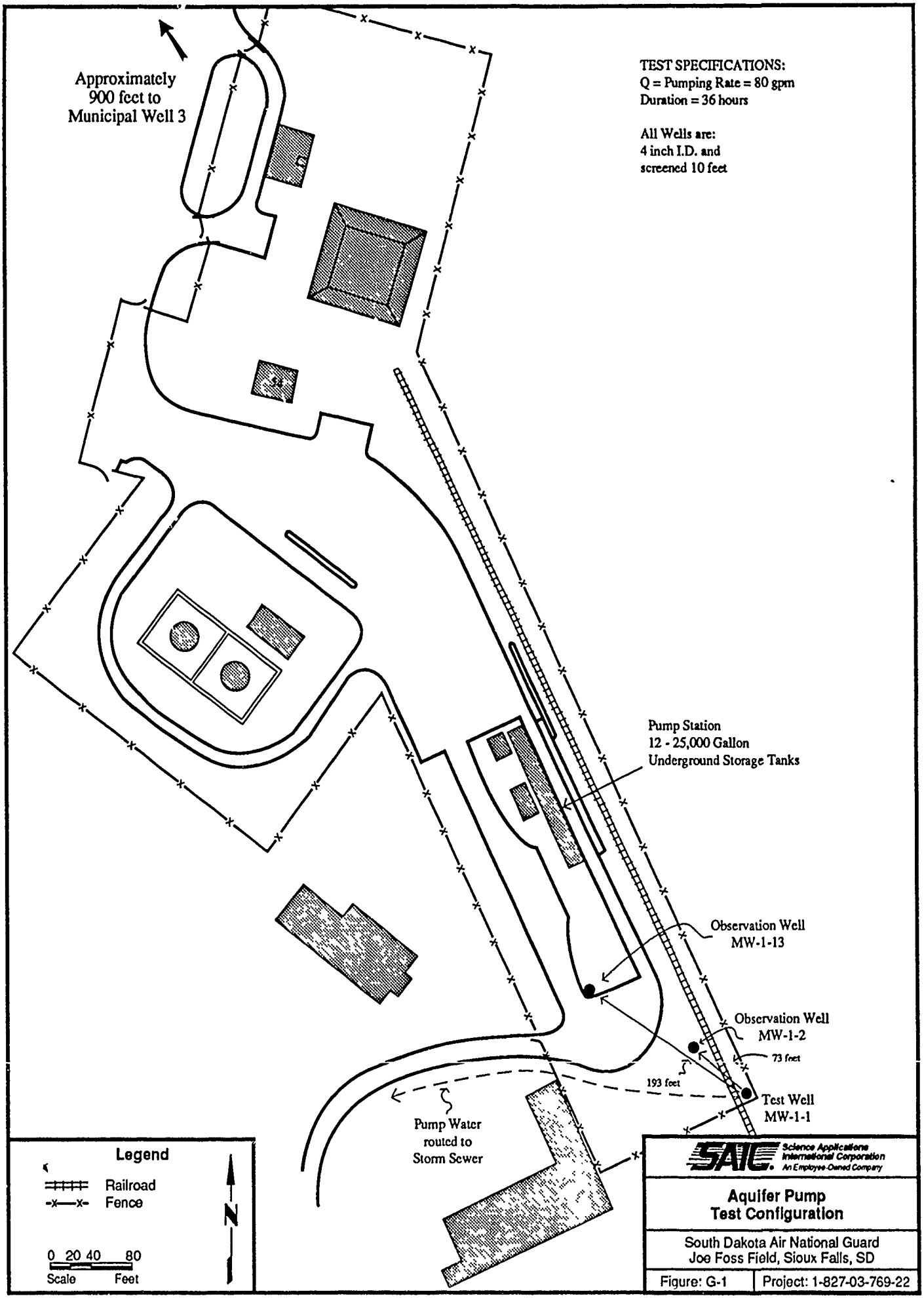
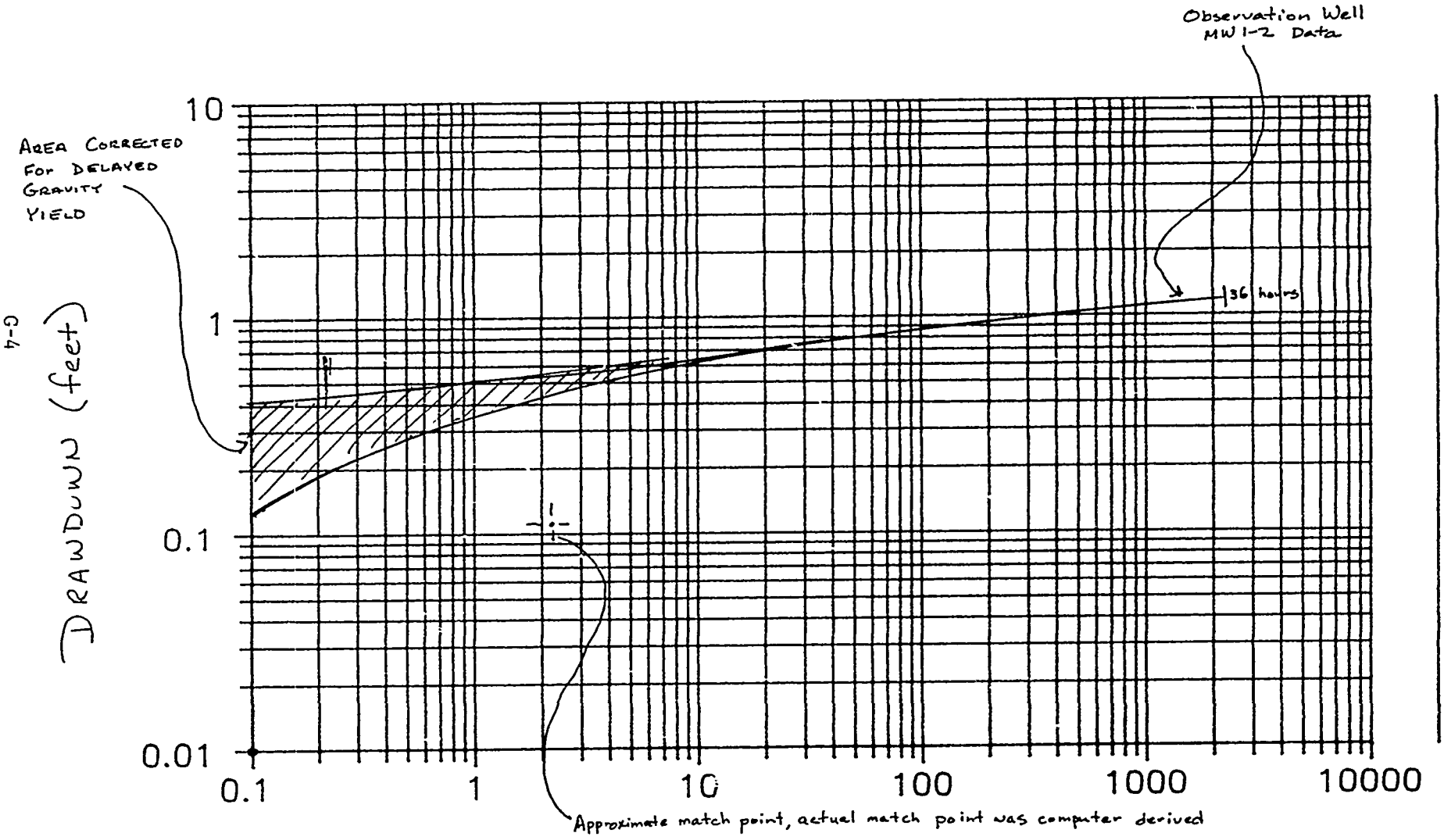

Approximately
900 feet to
Municipal Well 3
TEST SPECIFICATIONS:
Q = Pumping Rate = 80 gpm
Duration = 36 hours
All Wells are:
4 inch I.D. and
screened 10 feet
Pump Station
12 - 25,000 Gallon
Underground Storage Tanks
Observation Well
MW-1-13
Observation Well
MW-1-2
73 feet
193 feet
Test Well
MW-1-1
Pump Water
routed to
Storm Sewer
Legend
Railroad
Fence
0 20 40 80
Scale Feet
N
SAIC Science Applications International Corporation An Employee-Owned Company
Aquifer Pump
Test Configuration
South Dakota Air National Guard
Joe Foss Field, Sioux Falls, SD
Figure: G-1
Project: 1-827-03-769-22

TABLE 1. ASSESSMENT OF AQUIFER EFFECTS ON PUMP TEST DATA

Effect of well storage:		
	ts = time after pumping beyond which well storage has minimal effect	= 1 min.
Effect of Well Partial Penetration:		
	rp = distance from production well beyond which partial penetration impacts are negligible	= 42 ft.
Effect of Water Table Decline with Delayed Gravity Yield:		
	td = time after pumping beyond which delayed gravity yield is negligible	= 91 min.
Time of Pumping Until Boundary Effects are Encountered:		
	ti = test duration which must be exceeded for boundary effects to be clear	= 8.24 days
where:		
	rw = production well effective radius	= 0.5 ft.
	rc = pump-column pipe radius	= 0.125 ft.
	T = aquifer transmissivity	= 86500 gpd/ft.
	@ = aquifer thickness	= 20 ft.
	Ph = aquifer horizontal K	= 4500 gpd/ft^2
	Pv = aquifer vertical K	= 2250 gpd/ft^2
	Sy = specific yield	= 0.19
	ri = distance from observation well to boundary image well	= 1000 ft.

FIGURE 2


Observation Well
MW 1-2 Data
Area Corrected
For Delayed
Gravity
Yield
36 hours
10
1
0.1
0.01
0.1
1
10
100
1000
10000
Approximate match point, actual match point was computer derived
DRAWDOWN (feet)
TIME (minutes)

two curves recorded. Using these match points and the testing parameters, values of Transmissivity (T) and Storativity (S) were calculated using the equations presented in Table 2.

Values of T and S were 86,500 gpd/ft and 0.19, respectively. These values varied by no more than 5% between the different tests performed.

TABLE 2

Transmissivity and storativity calculations using the modified Theis (1935) non-equilibrium well equations:

$$T = \frac{114.6\ Q \cdot W(u)}{s}$$

$$= \frac{114.6 \cdot 80\ \text{gal/min} \cdot 1}{0.106}$$

$$= 86{,}500\ \text{gpd/ft}$$

Where:

W(u) = 1 = a well function derived from an exponential integral and is resultant from the curve matching technique

Q = 80 gpm = test pumping rate

s = 0.106 = drawdown derived from the curve matching technique
* Computer derived

$$s = \frac{u \cdot T \cdot t}{1.87 \cdot r^2}$$

$$= \frac{0.01 \cdot 86{,}500 \cdot 2.18}{1.87 \cdot (73)^2}$$

$$= 0.19$$

Where:

u = 0.01 = computer derived match point of overlain curves

T = 86.5 = Transmissivity (from above calculations)

t = 2.18 = time derived from curve matching technique
* Computer derived

r = 73 = radial distance of observation wells to test well.

APPENDIX H:

RISK ASSESSMENT METHODS

APPENDIX H
PUBLIC HEALTH RISK EVALUATION PROCESS

H.1 INTRODUCTION

Risk Assessment is an essential component of the Remedial Investigation/Feasibility Study (RI/FS) process at hazardous waste sites. The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the National Contingency Plan (NCP) require that actions selected to remedy hazardous waste sites be protective of human health and the environment. An overview of risk assessment in the RI/FS process is presented in the NCP and in the U.S. Environmental Protection Agency (EPA) manual, *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (USEPA 1988b). A baseline risk assessment is conducted as part of the RI to assess site conditions in the absence of remedial actions. As part of the FS process, risk assessment is used to evaluate the acceptability of proposed remedial actions and as a tool in the development of remediation objectives (target cleanup levels).

The public health risk evaluation at the South Dakota Air National Guard (SDANG) Base at Joe Foss Field examines the presence and release of chemicals from the sites under investigation, the observed levels of the compounds in the environment, the potential routes of exposure to human receptors, and the likelihood of adverse health effects following contact with contaminated environmental media. A detailed overview of the assessment methods used is presented in the following discussion. The focus of this evaluation is not an absolute assessment of the risks of exposure to the chemicals present at the sites under investigation. Rather, this evaluation is an appraisal of the relative magnitude of anticipated health problems that may be associated with exposure to chemicals detected at the site. The intention is to determine if there is a significant threat to human health and to assess the need for further site remediation.

H.2 OVERVIEW OF METHODS

The general approach to public health risk evaluation of exposure to chemical contaminants has been well established. The National Research Council prepared a comprehensive overview of the structure of this assessment (NRC 1983) that has become the foundation for subsequent EPA guidance. The *Human Health Evaluation Manual* and the *Environmental Evaluation Manual* (USEPA 1989a,b) provide a detailed presentation of the risk assessment process. These documents are the Agency's key guidance on risk assessment under the Superfund Program. As specified by EPA, the public health evaluation process may be divided into four fundamental component analyses: 1) data evaluation and hazard identification, 2) exposure assessment, 3)

toxicity or hazard assessment, and 4) risk characterization. These analyses are briefly described in the following discussion.

H.2.1 Data Evaluation and Hazard Identification

The first step in the risk assessment process is to obtain and evaluate all available data on contaminants present at the sites under investigation. The objective is to organize the data into a form appropriate for the baseline risk assessment. Once the preliminary data set has been obtained and sorted by environmental medium, the following evaluation steps should be completed:

- Evaluate the analytical methods used to determine if results are appropriate for use in quantitative risk assessment
- Evaluate the quality of data with respect to sample quantitation and detection limits
- Examine laboratory qualifiers assigned to monitoring data and evaluate potential quality assurance/quality control (QA/QC) problems
- Evaluate the quality of data with respect to blanks and tentatively identified compounds
- Summarize information on background concentrations of chemicals and compare with observed levels of site-related contamination
- Identify chemicals of potential concern: develop a data set that may be appropriately used in the risk assessment process
- Limit further, if appropriate, the number of chemicals to be used as the subject of the risk assessment process.

From the full listing of all chemicals identified at a waste site or facility, a subset is identified that is of sufficient quality to be used in risk assessment. It may be impractical to evaluate all chemicals that have passed through QA/QC review. Representative "highest risk" compounds may be selected on the basis of 1) quantities present at the site; 2) extent of environmental contamination, toxicity, or hazardousness; and 3) mobility and persistence of the chemical in the environment. This final step is specified as optional by EPA, and does not improve the quality or accuracy of the risk assessment. The step is suggested as a device for facilitating the risk assessment process when time and resources prohibit the evaluation of the full (and often complex) data set.

H.2.2 Exposure Assessment

H.2.2.1 General Approach

The objectives of the exposure assessment are to 1) delineate exposure pathways; 2) identify receptors at maximum risk; and 3) measure or estimate for each receptor the intensity, duration, and frequency of the exposure. Critical to the exposure assessment is a quantification of the

releases of contaminants of concern to each environmental medium (from all sources at the waste site) and an assessment of the transport and transformation of the subject compounds. The results of these analyses provide data on the magnitude and extent of contamination. Both monitoring data and environmental transport modeling typically are used in the exposure assessment.

In a public health risk assessment of hazardous waste sites, exposure pathways that may be identified include ingestion of contaminated groundwater or surface water, ingestion of soil or inhalation of contaminated soil particulates, dermal contact with contaminated soil or water, and inhalation of volatile compounds. The ingestion pathway is the exposure route of primary concern in the assessment of waste sites at SDANG. Dose estimates (in mg/kg/day) are developed for each chemical of concern. Estimates of dose are needed in the risk characterization and are generally determined as follows:

$$\text{Dose} = C \times \frac{CR \times EFD \times ABS}{BW \times AT} \qquad (1)$$

where:

- C = Chemical concentration in the environmental medium under evaluation
- CR = Contact rate; the amount of contaminated medium contacted per unit time or event
- EFD = Exposure frequency and duration; how long and how often exposure occurs
- ABS = Absorption factor
- BW = Body weight; the average over the exposure period

and

- AT = Averaging time; the period over which exposure is averaged.

Equation (1) is used to derive estimates of subchronic or chronic dose (lifetime assumed to be 70 years). The chronic dose estimate based on mean concentrations in environmental samples (arithmetic mean) was used as the basis of the risk characterization at all sites under investigation.

H.2.2.2 Comparison with Applicable or Relevant and Appropriate Requirements

Once the baseline concentrations of subject chemicals have been determined at the waste sites, these levels are compared to applicable or relevant and appropriate requirements (ARARs). CERCLA as amended by the Superfund Amendments and Reauthorization Act of 1986 requires the selection of remedial actions at Superfund hazardous waste sites that are protective of human health and the environment, cost-effective, and technologically and administratively feasible. Section 121 of CERCLA specifies that response action must be undertaken in compliance with ARARs established in Federal and State environmental laws.

In the revised NCP (USEPA 1988c) and *CERCLA Compliance With Other Laws Manual* (USEPA 1988), several different types of requirements are identified with which Superfund remedial actions must comply: 1) ambient or chemical-specific requirements, 2) action-specific requirements, and 3) location-specific requirements. Because situations at CERCLA sites vary widely, EPA cannot categorically specify requirements that will be ARARs for every National Priority List site. ARARs can only be identified on a site-specific basis (i.e., established in connection with the characteristics of the particular site, the chemicals present at the site, and the remedial alternatives suggested by the circumstances of the site).

EPA has specified that the different ARARs that may apply to a site and its remediation should be identified and considered at several points in the remedial planning process (USEPA 1987), as delineated below:

- During scoping of the RI/FS, chemical- and location-specific ARARs may be identified on a preliminary basis.
- During the site characterization phase of the RI when the baseline public health evaluation is conducted to assess the risk at a given site, the chemical-specific ARARs and advisories and location-specific ARARs are identified more comprehensively and used to help determine cleanup objectives.
- During the development of remedial alternatives in the FS, action-specific ARARs are identified for each proposed remedial alternative and are considered along with other ARARs and advisories.
- During the detailed analysis of alternatives, all ARARs for each proposed remedial action must be examined to establish the appropriate level of protection and to comply with other environmental laws.
- In selecting the most appropriate alternative, the remedial action chosen must be able to attain all ARARs, unless one of the six statutory waivers is invoked.
- During remedial design, the technical specifications of construction must comply with appropriate ARARs (primarily action-specific).

In the RI/FS process, the evaluation of remedial alternatives must consider effectiveness, implementability, and cost. Within the context of the effectiveness evaluation, chemical-specific ARARs assume major significance. Each alternative is evaluated with regard to effectiveness in protecting human health and the environment. Effectiveness criteria include protectiveness and the envisioned reduction of toxicity, mobility, or volume through treatment.

According to the guidance presented in the revised NCP, protectiveness (i.e., the ability to protect human health and the environment) means that a given remedial alternative meets or exceeds ARARs or other risk-based levels established through a risk assessment when ARARs do not exist

or are waived. In the NCP and in the guidance manual on CERCLA compliance with other laws (USEPA 1988c, USEPA 1988a, USEPA 1989d), EPA specifies that when ARARs are not available for a given chemical or where such ARARs are not sufficient to be protective, health advisory levels should be identified or developed to ensure that a remedy is protective. For carcinogenic effects, these health advisory or cleanup levels are to be selected such that the total risk of all contaminants falls within the acceptable range of 10^{-4} to 10^{-7}. Although the 10^{-6} risk level is identified by EPA as a "point of departure" in evaluating the results of risk assessment, the revised NCP clearly indicates that the 10^{-4} level is the upper bound of the acceptable range (USEPA 1988c). In cases where noncarcinogenic effects are a concern, EPA specifies that cleanup should be based on acceptable levels of exposure, as determined by the EPA reference doses (RfDs), taking into account the effects of multiple contaminants and multiple exposure pathways at the site.

Therefore, chemical-specific ARARs serve two primary purposes: 1) requirements that must be met by a selected remedial alternative (unless a waiver is obtained) and 2) as a basis for establishing appropriate cleanup levels. The public health risk assessment of a given remedial action alternative characterizes the actual risk of exposure of human receptors to contaminants under investigation. For carcinogens, risk characterization yields a probable estimate of the additional lifetime risk of cancer in the exposed individual or the incidence of new cases of cancer in populations. For noncarcinogens, exposure levels or doses for all subject compounds are evaluated to determine levels or doses if these exceed EPA RfDs. When an ARAR is available for all subject compounds of concern and the ARARs are determined to be protective, these requirements become the chemical-specific cleanup goals. As noted previously, however, when ARARs are found not to be protective or are not available, the results of the risk assessment (i.e., health advisory levels) are used to establish the more stringent target cleanup goals.

Thus, the requirement that a remedial alternative meet chemical-specific ARARs does not ensure that the proposed alternative is protective and thereby potentially acceptable. This can be determined only by 1) evaluating the combined carcinogenic risk associated with the ARAR limits for all chemicals at a given site (assuming additivity of effect in the absence of data on synergism or antagonism), 2) establishing that ARARs do not exceed EPA RfDs for noncarcinogenic effects and are sufficiently protective when multiple chemicals are present, 3) determining whether environmental effects in addition to human health considerations are adequately addressed by the ARARs, and 4) evaluating whether the ARARs adequately cover all significant pathways of human exposure identified in the baseline risk assessment. The EPA Human Health Evaluation Manual

(USEPA 1989a) provides guidance on evaluating multiple exposure to chemicals (carcinogenic and noncarcinogenic effects) and on establishing acceptable exposure levels when no ARARs exist.

H.2.3 Toxicity Assessment

The objectives of the toxicity or hazard assessment are to evaluate the inherent toxicity of the compounds under investigation and to identify and select toxicological measures for use in evaluating the significance of the exposure. When developing these toxicological measures, available dose-response data are reviewed on the adverse effects to human and nonhuman receptors. Dose-response assessments for noncarcinogens provide an estimate of the no-observable-adverse-effect level (NOAEL) or lowest-observable-adverse-effect level (LOAEL). For carcinogenic compounds, the dose-response assessment yields estimates of probability or range of probabilities under which a carcinogenic effect will occur at a specified level of exposure.

In conducting an assessment of risk of exposure to chemicals released from waste sites, several toxicity measures of importance may be identified:

- RfDs for oral exposure - Acceptable intake values for subchronic and chronic exposure (noncarcinogenic effects)
- RfDs for inhalation exposure - Acceptable intake values for subchronic and chronic exposure (noncarcinogenic effects)
- Carcinogenic potency factors for oral exposure
- Carcinogenic potency factors for inhalation exposure.

The RfDs and potency factors for oral exposure are the toxicity measures needed in the assessment for SDANG. Long-term (i.e., chronic) exposure and health risk is the focus of the evaluation at all sites.

The primary sources of information for these data are the Integrated Risk Information System (IRIS) data base and the EPA Office of Research and Development (ORD) Health Effects Assessment Summary Tables (USEPA 1989c). The IRIS is a computer-housed catalog of EPA risk assessment and risk management information for chemical substances. Data in the IRIS system is regularly reviewed and updated by EPA. The Superfund Public Health Evaluation Manual (1986a) is used as a secondary source of information only.

H.2.4 Risk Characterization

The last step in the baseline public health evaluation is risk characterization. This is the process of integrating the results of the exposure and hazard (toxicity) assessment (i.e., of comparing estimates of dose with appropriate toxicological endpoints to determine the likelihood of adverse effects in exposed populations). It is common practice to consider risk characterization separately for carcinogenic and noncarcinogenic effects because of a fundamental difference in the way organisms typically respond following exposure to carcinogenic or noncarcinogenic agents. For noncarcinogenic effects, toxicologists recognize the existence of a threshold of exposure below which there is only a very small likelihood of adverse health impacts in an exposed individual. Exposure to carcinogenic compounds, however, is not thought to be characterized by the existence of a threshold. Rather, all levels of exposure are considered to carry a risk of adverse effect.

The procedure for calculating risk associated with exposure to carcinogenic compounds has been established by EPA (USEPA 1986b,c; UESPA 1989a). A nonthreshold, dose-response model is used to calculate a carcinogenic potency factor (which mathematically is the slope of the dose-response curve) for each chemical. To derive an estimate of risk, the carcinogenic potency factor (q1* - defined in the following equation) is then multiplied by the estimated chronic daily dose experienced by the exposed individual:

$$R = D \times q1^* \qquad (2)$$

where:

D = Chronic daily dose (mg/kg body weight/day)

and

q1* = 95% upper-bound estimate of the slope of the dose-response curve [(mg/kg body weight/day)-1].

R is an explicit estimate of excess lifetime risk having a value between 0 and 1 and expresses the additional probability that an individual will develop cancer over a lifetime of exposure at the specified dose level. In evaluating risk of exposure to more than one carcinogen, the risk measure (R) for each compound may be summed (in the absence of information on antagonistic or synergistic effects) to provide an overall estimate of total carcinogenic risk (USEPA 1986a,b). This is conducted for each source of environmental release, associated exposure pathway, and receptor group at risk of exposure. Population risks are derived by multiplying the overall risk level (summed for all subject chemicals) by the number of people exposed. This would yield a measure of the additional incidence of developing cancer (i.e., additional number of new cases) in the exposed population over a lifetime (i.e., 70 years) of exposure.

Equation (2) is recommended only for quantifying estimated carcinogenic risk levels < 1 x 10^{-2} (USEPA 1989a). Where exposure/dose for carcinogens is high and the combined risk exceeds 10^{-2}, an alternate model is recommended by EPA for quantifying lifetime risk, as follows:

$$R = 1\text{-}\exp(-D \times q1^*). \quad (3)$$

The traditionally accepted practice of evaluating exposure to noncarcinogenic compounds has been to experimentally determine a NOAEL, then divide it by a safety factor to establish an acceptable human dose, for example, acceptable daily intake or RfD (USEPA 1989a). The RfD is then compared to the average daily dose experienced by the exposed population to obtain a measure of concern for adverse noncarcinogenic effects:

$$HQ = D/RfD \quad (4)$$

where:

HQ = Hazard quotient: potential for adverse noncarcinogenic effects

D = Average daily dose for subchronic or chronic exposure (mg/kg body weight/day)

and

RfD = Acceptable intake for subchronic or chronic exposure (mg/kg body weight/day).

If the HQ is greater than 1, the potential may exist for adverse noncarcinogenic effects at the given exposure/dose level. Final guidelines for evaluating exposure to mixtures of noncarcinogens is presented by EPA (1986b). Essentially, this involves summing the HQs (ratios of daily dose/RfD) for all chemicals under evaluation to form a hazard index (HI). If the sum of these ratios (HI) is greater than 1, the potential exists for adverse noncarcinogenic effects. Under these circumstances, EPA recommends segregating the compounds into groups of like or common toxicological effects and again to evaluate the potential for manifestation of the various adverse health effects identified.

H.3 METHODS FOR EQUILIBRIUM PARTITIONING ANALYSIS OF SOIL CONTAMINATION

An approach has been adopted for evaluating the potential health significance of observed levels of contamination in subsurface soils at SDANG. An equilibrium partitioning approach is adopted to estimate the concentration of site-related contaminants in soil pore water that correspond

to the measured concentrations of chemicals in the soil matrix. An extremely conservative risk estimate is then developed by projecting the potential for adverse health effects associated with hypothetical exposure to the soil pore water. The concentration of chemicals in the aquifer beneath the site could never exceed the projected concentrations in pore water. Given the effects of dilution, attenuation, and transformation, the groundwater levels are likely to be orders of magnitude less than the projected pore water concentrations.

The relationship between the amount of a chemical absorbed on soil and the equilibrium concentrations in soil pore water may be expressed using the Freundlich Isotherm, as follows (Lyman 1982):

$$C_s = K \times C_{pw}^{1/n} \quad (5)$$

where:

C_s = Concentration of a given chemical in soil (mg/kg)

C_{pw} = Concentration of the chemical in pore water (mg/L)

K = Soil-water distribution coefficient (liters/kg)

and

n = Constant for a given chemical.

Equation (5) is most appropriately used for nonionizing organic chemicals. For this class of compounds, it is possible to express the tendency of a compound to be absorbed in terms of a parameter K_{oc} (the organic carbon-water equilibrium partition coefficient), which is largely independent of the properties of the soil itself.

$$K = (K_{oc}) \times (f_{oc}) \quad (6)$$

where:

K_{oc} = Organic carbon-water equilibrium partition coefficient (liters/kg)

and

f_{oc} = Fraction of organic carbon in soil (unitless).

In this screening level assessment, the value of n may be approximated at unity (1.0) for the nonionizing organic chemicals. The linear Freundlich equation may then be combined with the expression for the distribution coefficient (K) to yield:

$$C_{pw} = C_s/K_{oc} \times f_{oc}. \quad (7)$$

Equation (7) above is used to project the equilibrium concentration of a chemical in soil pore water (C_{pw}) that would correspond to the concentration in the soil matrix. A value of 0.02 (2 percent) has been adopted as the fraction organic carbon content for soils at the Base (based on the results of site sampling and analysis).

REFERENCES

Integrated Risk Information System. 1989. U.S. Environmental Protection Agency on-line data base of toxicity measures. Office of Research and Development, Environmental Criteria and Assessment Office, Cincinnati, OH. Electronic Mail Account information via Dialcom, Inc., Washington, DC.

National Research Council. 1983. *Risk Assessment in the Federal Government: Managing the Process.* National Academy Press, Washington, DC.

U.S. Environmental Protection Agency. 1986a. *Superfund Public Health Evaluation Manual.* EPA, Office of Emergency and Remedial Response. Washington, DC.

U.S. Environmental Protection Agency. 1986b. *Guidelines for Carcinogenic Risk Assessment.* Washington, DC.

U.S. Environmental Protection Agency. 1986c. *Guidelines for Health Risk Assessment of Chemical Mixtures.* Washington, DC.

U.S. Environmental Protection Agency. 1987. *Superfund Program: Interim Guidance on Compliance With Other Applicable or Relevant and Appropriate Requirements.* Washington, DC.

U.S. Environmental Protection Agency. 1988a. *CERCLA Compliance With Other Laws Manual.* EPA, Office of Emergency and Remedial Response. Washington, DC.

U.S. Environmental Protection Agency. 1988b. *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA.* EPA, Office of Solid Waste and Emergency and Remedial Response. Washington, DC.

U.S. Environmental Protection Agency. 1988c. *National Oil and Hazardous Substances Pollution Contingency Plan (NCP).* Washington, DC.

U.S. Environmental Protection Agency. 1989a. *Risk Assessment Guidance for Superfund: Human Health Evaluation Manual Part A.* EPA, Office of Solid Waste and Emergency and Remedial Response. Washington, DC.

U.S. Environmental Protection Agency. 1989b. *Risk Assessment Guidance for Superfund: Volume II Environmental Evaluation Manual.* Office of Solid Waste and Emergency and Remedial Response. Washington, DC.

U.S. Environmental Protection Agency. 1989c. Health Effects Assessment Summary Tables - Third Quarter FY 1989. EPA, Office of Research and Development. Washington, DC.

U.S. Environmental Protection Agency. 1989d. *CERCLA Compliance With Other Laws Manual, Part II.* EPA, Office of Emergency and Remedial Response. Washington, DC.

APPENDIX I:

BIOGRAPHIES OF KEY PERSONNEL

MAMIE S. BROUWER

EDUCATION

University of California, Berkeley: B.A., Botany, 1981
University of San Francisco: M.S. Candidate, Environmental Management

SHORT COURSES

1984 Capillary Column Chromatography - Hewlett-Packard, Sunnyvale, CA
1985 Principles of Gas Chromatography - Varian Corporation, San Ramon, CA

SUMMARY OF EXPERIENCE

Ms. Brouwer is an Environmental Scientist with SAIC's Environmental Technology Group in the Applied Technology Division. She has 7 years of professional experience as an environmental analytical chemist and laboratory program manager.

Ms. Brouwer's work in environmental chemistry has included developing integrated laboratory and field Quality Assurance Project Plans for the USAF Installation Restoration Program (IRP), IRP analytical data review, and analytical specifications review for bids and proposals.

As a Laboratory Program Manager for Clayton Environmental Consultants in Pleasanton, California, Ms. Brouwer served as the technical supervisor for the laboratory's commercial clients. Her responsibilities included communication with the project manager and laboratory staff, review of the technical soundness of the project analysis scheme, analytical data review, and final report preparation. Ms. Brouwer was also responsible for proposal preparation and business development. Key clients included chemical manufacturers, research and development facilities, and environmental consulting firms. Two investigations were located at sites on the National Priority List. Ms. Brouwer also has developed laboratory analytical programs modeled after the U.S. EPA's Contract Laboratory Program (CLP) for nonregulatory clients.

As a Chemist II, Ms. Brouwer served as the Senior Chemist and Gas Chromatography Section Leader. She was responsible for the supervision of two chemists and the operation of nine gas chromatographs. Daily responsibilities included analyst and instrumentation scheduling, instrument maintenance and operation, section quality assurance/quality control, data review, and method development. Volatile halocarbon and aromatic hydrocarbon, organochlorine and organophosphorus pesticide, and petroleum hydrocarbon analyses were conducted most frequently in the Chromatography Section.

Verified for accuracy by: Mamie S. Brouwer Date: 09/07/88

SAIC
An Employee-Owned Company

As a Technician III with Engineering-Science, Inc. in Berkeley, California, Ms. Brouwer was responsible for metals preparation and analysis using Atomic Absorption Spectrophotometry and pesticide and herbicide sample preparation and analysis using Gas Chromatography.

Ms. Brouwer's Master Thesis concerns the deposition of DDT and its metabolites in sediments located in an agricultural drain near Salinas, California.

PROFESSIONAL AFFILIATION

American Chemical Society

EMPLOYMENT HISTORY

Science Applications International Corporation
November, 1987 - Present

Clayton Environmental Consultants, Inc.
February, 1983 - September, 1987

Engineering - Science, Inc.
October, 1980 - February, 1983

Verified for accuracy by: Marina S. Brouwer Date: 09-07-88

SAIC
An Employee-Owned Company

JOHN R. CARTER, III

EDUCATION:

Virginia Polytechnic Institute and State University: B.S., Geophysics (1985)
Minor: Applied Engineering Mathematics
Texas Tech University: Field Study, Salida, Colorado (1985)

SUMMARY OF EXPERIENCE:

Mr. Carter is a staff geophysicist/geologist within the Environmental Technology Group (ETG) of Science Applications International Corporation (SAIC). Since joining SAIC, he has provided technical support and field management for projects under the Department of Defense (DOD) Installation Restoration Program (IRP) as well as the Superfund Innovative Technology Evaluation (SITE) program. Mr. Carter also assists in the management and operation of SAIC's Equipment Service Center which is responsible for the allocation, tracking, and maintenance of all equipment for ETG field projects. Mr. Carter has recently completed an eight-hour Environmental Protection Agency (EPA) required health and safety refresher course in addition to an SAIC health and safety course for managers and supervisors.

Department of Defense Installation Restoration Program

Mr. Carter has played an active role in all phases of the Installation Restoration Program (IRP). This program determines the degree and extent of environmental degradation associated with past waste handling practices. He has assisted in the issuance of subcontractor contracts, planned and extensively participated in field projects, and co-authored reports.

Most recently, Mr. Carter served on the field crew conducting Site Investigation (SI) activities at Toledo ANGB, Swanton, Ohio. He was responsible for the installation and development of all well points and assisted in a groundwater probe survey.

Mr. Carter served as the supervisory field geologist/manager during the installation of bedrock groundwater monitoring wells at the Niagara Falls ANGB, Niagara Falls, N.Y. This position required supervision of the installation, development, soil sampling, and all employees involved with this phase of the project. Mr. Carter also served as the co-field manager during the groundwater sampling of all on-base monitoring wells and was responsible for the collection of all surface water/sediment samples.

Verified for accuracy by: J. R. Carter III Date: 12/22/89

SAIC
An Employee-Owned Company

Mr. Carter has been a part of IRP activities at a number of installations: Toledo ANGB, Ohio; Niagara Falls ANGB, New York; Joe Foss Field ANGB, South Dakota; Hancock Field ANGB, New York; and McEntire ANGB, South Carolina. He has gained the following skills from his extensive field work at these sites: supervision of hollow stem auger, mud and air rotary drilling operations, and soil borings, installation of shallow/deep groundwater monitoring wells, subsurface sampling using a standard split-spoon, Shelby tube and California ring samplers, monitoring well development and purging, surface water/stream discharge/flow measurements, aquifer characterization and drum sampling. Mr. Carter has also participated int the sampling of soils, surface water, sediments and groundwater and their handling and shipment.

Mr. Carter has also been involved in the writing of reports associated with the IRP. His responsibilities have included: assimilation, review and analysis of field and analytical laboratory data; assessment and characterization of associated geologic and hydrogeologic conditions, and review and revision of IRP documents. Currently Mr. Carter is assisting in the writing and production of the Remedial Investigation Final Report for Joe Foss Field ANGB, South Dakota.

Superfund Innovative Technology Evaluation (SITE) Program

Mr. Carter provided support to a U.S. Environmental Protection Agency (EPA) SITE project conducted in New Bedford, Massachusetts. This project dealt with the clean-up of PCB-contaminated ocean sediments. His responsibilities included field data assimilation and analysis. Mr. Carter also contributed technically to the final report associated with this project.

In addition, Mr. Carter co-manages the ETG Equipment Service Center. He assisted in the development of a tracking system for this program and an associated data base to maintain and ensure operation of over 200 pieces of necessary environmental/safety equipment. Mr. Carter has also revised company-wide Standard Operating Procedures (SOP) for hazardous waste field work.

Verified for accuracy by: J. K. Carter III Date: 12/22/89

SAIC

An Employee-Owned Company

J. ERIC GIBSON

EDUCATION

University of Delaware, Bachelor of Science, Geology, (1984)
George Washington University, Masters Level Hydrogeology Course, (1986)

EXPERIENCE

Mr. Gibson is a Supervisory Geologist with over four years experience conducting and managing a wide variety of hazardous waste related tasks. This experience has encompassed all four phases of the CERCLA/SARA PA/SI/RI/FS process and ranges from conducting Preliminary Assessments (PA) at a variety of sites to designing and performing a multitude of Site Inspections (SI) and Remedial Investigations (RI) to designing and implementing pilot-scale remedial actions related to Feasibility Studies (FS). He has used this "hands-on" experience to evaluate a number of RCRA compliance documents.

Currently, Mr. Gibson is Remedial Investigation manager at two Installation Restoration Projects (IRP) for the Air National Guard. His responsibilities in these investigations, which are located in Colorado and South Dakota, include RI Work Plan development and costing; acquisition of any subcontractors; technical and financial management of all field work; and performing and managing the data evaluation and project report writing. In this capacity he is also responsible for aiding in the design and implementation of remedial actions evaluated and selected during the FS which has recently included a pilot-scale test of the use of an air stripper at a hydrocarbon spill site on one of the above projects.

Mr. Gibson is familiar with all aspects of investigating hazardous waste sites and has been developed during past involvement with IRP, EPA Superfund, and research and development projects while serving in the capacity of either RI Manager, Field Operations Manager, or Site Geologist. This experience is broad and varied because these studies have been conducted in a wide variety of environmental and hydrogeologic settings including sites in Alaska, California, Colorado, Delaware, Idaho. Illinois, Louisiana, Missouri, New Jersey, New York, South Caroiina, South Dakota, Texas, and Utah. He is experienced with a multitude of different field data collection methods including soil gas and groundwater probe surveys; soil boring, lysimeter, and monitoring well installation; terrain conductivity, resistivity, magnetometer, and seismic refraction and reflection geophysical techniques; slug testing, and step-drawdown and constant rate pump test aquifer testing methods; sampling a

Verified for accuracy by: J. Eric Gibson Date: 4-7-89

SAIC

variety of different environmental media; and field lab analyses and on-site gas chromatography for on-site chemical analyses. All of these methods were employed while adhering to EPA guidelines and protocols and appropriate QA/QC measures. He is also experienced in evaluating the data from these methods using both conventional and computer-assisted techniques in order to characterize site contamination and hydrogeology.

His knowledge and experience was recently used during bedrock well packered-interval sampling and testing at the Stringfellow Acid Pits Superfund Site in California. This field project was designed to provide potentiometric head, hydrogeologic property, and chemical data which would give insight to the flow regime within the bedrock fractures and the importance in the transport of contamination beneath, around, and downgradient of the site. Mr. Gibson's responsibilities, while serving as Field Operations Manager, included work plan development, packer design, and the supervision of all site field work including QA/QC and health and safety requirements.

He has also participated in an in-situ bioreclamation research project at a contaminated site location on Kelly Air Force Base, Texas. This research project was intended to enhance the microbial degradation of organic contaminants through the controlled injection of microbe proliferating nutrients. His responsibilities in this remedial action research project consisted of: system operation (control and planning of the pumping and injection rates of both circulated groundwater and microbial nutrients); groundwater sampling; supervision of subcontractor personnel; sampling of contaminated soils obtained by drilling equipment while employing sterile sampling techniques; and field analysis of soil and groundwater chemical parameters.

Also, Mr. Gibson was previously employed by Delmarva Drilling Company of Bridgewille, Delaware. As a member of the drilling group, he assisted with all facets of water well installation and evaluation. His responsibilities include: logging and installation of groundwater producing and monitoring wells; conducting water well pumping and slug tests used in the determination water well and aquifer parameters; recommendations concerning water well location and design; and data interpretation.

Mr. Gibson was a research assistant for the Geology Department of the University of Delaware, during the summer of 1984. In this capacity, he assisted in the investigation of the geological and environmental characteristics of a coastal area experiencing rapid erosion in Central Delaware. He was responsible for flowmeter installation; collection of sediment samples; surveying of the coastal zone; determining the location of sediment sources; and preparation of reports.

Verified for accuracy by: J. Eric Gibson Date: 4-7-89

SAIC

PROFESSIONAL AFFILIATIONS

National Water Well Association

PUBLICATIONS

Installation Restoration Program Phase II - Confirmation/Quantification, State 1, Final Report for Charleston Air Force Base (Co-authored with E. Repa, et. al.); for U.S. Air Force, OEHL, Brooks AFB, Texas, (1986).

Installation Restoration Program Phase II - Confirmation/Quantification, State 1, Final Report for Charleston Air Force Base (Co-authored with J. Mentz, et. al.); for U.S. Air Force, OEHL, Brooks AFB, Texas, (1987).

Installation Restoration Program Phase II/IVA - Site Characterization Report for Gowen Field, Boise, Idaho; for the Air National Guard Service Center, Andrews AFB, Maryland (1987).

Installation Restoration Program - Site Inspection Report for Joe Foss Field, Sioux Falls, South Dakota; for the Air National Guard Service Center, Andrews AFB, Maryland (1988).

Verified for accuracy by: J. Eric Gibson Date: 4-7-89

SAIC

CONNIE DURST SAMSON

EDUCATION

Virginia Polytechnic Institute and State University: M.S., Environmental Engineering (1986)
University of Pittsburgh: B.S., Environmental Science (1977)

SUMMARY OF EXPERIENCE

Ms. Samson is a project manager and environmental engineer with SAIC's Waste Management Technology Department. She has more than 9 years of technical experience, ranging from design of water, wastewater, and hazardous waste treatment systems to evaluation and analyses of wastewater and soils. She has managed and provided engineering support for Superfund and the Department of Defense Installation Restoration Program (IRP) remedial investigation/feasibility study (RI/FS) projects. She also is familiar with Resource Conservation and Recovery Act (RCRA) regulations and permitting procedures. She has managed quality control/quality assurance (QA/QC) procedures and directed product research and development for a chemical manufacturing facility. She also has experience in field investigation activities, including groundwater monitoring well installation, environmental sampling to include groundwater, surface water, stream sediments, and soils and has planned and supervised treatability studies for the design of groundwater treatment systems.

EMPLOYMENT HISTORY

March 1985 to present: Science Applications International Corporation (SAIC)

Currently, Ms. Samson is managing an RI/FS study for the South Dakota Air National Guard at Joe Foss Field as part of the Department of Defense Installation Restoration Program (IRP). She is directing the field investigation of contaminated soils and groundwater from underground storage tanks and a fire training area. Ms. Samson also is managing the evaluation of remedial action alternatives for the contaminated sites and implementation of interim remedial actions for treatment of the contaminated groundwater at Joe Foss Field. Treatability studies for evaluating the performance of an air stripper for treatment of the groundwater were planned and conducted under her direction. Currently, she is managing the closure plans for twelve underground storage tanks, also at Joe Foss Field. For the Air National Guard, Ms. Samson also was the engineering operations manager for Gowen Field ANGB in Idaho. Her responsibilities included evaluation of the hazardous waste sites on the base to determine if remedial actions were necessary. In addition to her project management duties, she provides technical support and serves in a review capacity for various other IRP projects which include planning RI field and data collection activities, data evaluation, and development and evaluation of remedial action alternatives through feasibility studies. Ms. Samson also assists

Verified for accuracy by: Connie Durst Samson Date: 01-26-89
Connie Durst Samson

SAIC
An Employee-Owned Company

in the development and review of project work plans, quality assurance project plans, sampling and analysis plans, and project health and safety plans.

For SAIC, Ms. Samson assisted with various RI/FS programs in conjunction with the Superfund program. She provided engineering support for the RI/FS of a top priority Superfund site. Her responsibilities included detailed investigation of previous remediation efforts and engineering evaluation of on-site treatment techniques and removal options for both contaminated soils and groundwater.

Ms. Samson assisted with an RI/FS of the Rockaway Borough Well Field, a contaminated aquifer site on the CERCLA National Priorities List. Her responsibilities included developing candidate remedial alternatives and identifying the most cost-effective method for treating the contaminated groundwater aquifer which supplied potable water for the community.

For the EPA, Ms. Samson contributed to the design and operations management of an in situ biological treatment system at an Air Force site. The groundwater and subsurface soils at the site were contaminated with solvents, jet fuels, and plating wastes. The bioreclamation project was implemented by the injection of hydrogen peroxide and nutrients to enhance microbial degradation of the wastes. Ms. Samson assisted with the design of the injection and recovery system and developed a biological and chemical monitoring program to assess system operation and performance and evaluate treatment success. In addition, she was responsible for data analysis, field operations, and project engineering.

Ms. Samson participated in SAIC's research effort to develop solids separation equipment for the separation of dredged contaminated sediments by level of contamination. The research effort was conducted for EPA and the U.S. Coast Guard to evaluate methods to potentially reduce the cost of treatment and disposal of contaminated sediments. She was a major contributor to the development of a laboratory research study and pilot-scale equipment testing procedures. The laboratory study was designed to examine the distribution of organic and inorganic contaminants in both the grain size and organic fractions of contaminated sediments. Pilot-scale equipment testing was designed to evaluate separation efficiencies of various types of equipment.

Under the RCRA Implementation Program, Ms. Samson has become familiar with hazardous waste regulations and has participated in various aspects of the Program. She has reviewed RCRA Part B permit applications for completeness and technical deficiencies and formulated comments to direct the applicant in providing the necessary information in order to acquire RCRA permits. In addition, Ms. Samson has served as a member of Part B permit review

Verified for accuracy by: Connie Durst Samson Date: 01-26-89
Connie Durst Samson

SAIC
An Employee-Owned Company

QA/QC teams and has evaluated applications to meet the RCRA requirements under the Hazardous and Solid Waste Amendments of 1984. Ms. Samson has conducted RCRA Facility Assessments (RFAs), including preliminary reviews of files, visual site inspections, and as a member of environmental sampling teams. These activities have included identification of solid waste management units, evaluation of potential environmental releases from the units, review and evaluation of facility hazardous waste management practices, and acquisition of environmental samples for chemical analyses.

April 1984 to September 1984: Olver Incorporated

While employed as a project engineer for Olver Incorporated, Ms. Samson contributed to the design of a municipal collection and treatment system for handling wastewater. The system included primary treatment, secondary activated sludge treatment, and anaerobic digestion of waste solids. She also assisted with modifications and upgrade of a municipal water distribution and treatment system. Responsibilities included hydrant testing for pressure and flow rates, and pump, piping, and auxiliary equipment design and selection.

For private clients, Ms. Samson has gained experience in hazardous waste treatment system design, treatability studies, delisting petitions, facility closure plans, and RCRA Part B permit applications. She assisted with the design of a hazardous waste treatment system for an electric arc furnace steel production facility. Treatability studies were conducted under her direction to determine the most feasible method of rendering the waste material nonhazardous. She also was responsible for submitting a delisting petition to EPA for the treated nonhazardous waste. Facility closure plans for hazardous waste storage piles and surface impoundments were submitted under her direction for a steel production facility and a manufacturer of friction products. She is familiar with RCRA Part B permitting procedures. Experience in this area was gained by assisting with a permit application for a friction products manufacturing facility.

September 1983 to June 1984: Virginia Polytechnic Institute and State University

While attending graduate school at Virginia Polytechnic Institute and State University, Ms. Samson was a research and teaching assistant in the Department of Civil Engineering. She directed graduate and undergraduate laboratory studies in the design and operation of bench scale ion exchange, dual media filtration, biological wastewater treatment, and sedimentation unit process operations. She also directed laboratory studies in the characterization of water, municipal wastewater, and industrial wastewater. Her research effort at VPI examined a treatment and recovery technique for

Verified for accuracy by: Connie Durst Samson Date: 01-26-89
Connie Durst Samson

SAIC
An Employee-Owned Company

a hazardous waste and was presented in a thesis entitled "Removal of Silver and Mercury from COD Waste Solutions."

May 1980 to September 1982: Carbose Corporation

As an independent consultant for a chemical manufacturing plant, Ms. Samson established QA/QC procedures for the company and directed product research and development.

September 1977 to September 1982: Energy Center Incorporated

Ms. Samson managed laboratory operations for characterizing and testing water, wastewater, soils, and coal. For Energy Center Incorporated, she also assisted with mine reclamation studies and conducted acid mine drainage treatability studies.

October 1975 to November 1976: University of Pittsburgh

As a full-time undergraduate student at the University of Pittsburgh, Ms. Samson participated on an EPA research grant to evaluate the performance of a three-stage, aerated lagoon, municipal wastewater treatment system. She conducted water quality and hydraulic parameter monitoring and analyses. The evaluation resulted in recommendations for system operational improvements.

PROFESSIONAL LICENSES AND MEMBERSHIPS

Virginia Engineer-In-Training Certification
Water Pollution Control Federation Member
American Water Works Association Member

AWARDS AND HONORS

Tau Beta Pi Engineering Honor Society
Phi Kappa Phi National Honor Society

PUBLICATIONS

Wetzel, R.S., D.H. Davidson, and C.M. Durst. 1987. Effectiveness of In Situ Biological Treatment of Contaminated Groundwater and Soils at Kelly Air Force Base, Texas. Proceedings of the Oak Ridge Model Conference. The Department of Energy Oak Ridge Operations, Oak Ridge, Tennessee, October 13-16, 1987.

Verified for accuracy by: Connie Durst Samson Date: 01-26-89
Connie Durst Samson

SAIC
An Employee-Owned Company

Wetzel, R.S., D.H. Davidson, C.M. Durst, and D.J. Sarno. 1987. Effectiveness of In Situ Biological Treatment of Contaminated Groundwater and Soils at Kelly Air Force Base, Texas. Proceedings of the 4th Annual Conference on Hazardous Materials and Hazardous Wastes. Hazardous Materials Control Research Institute, Washington, D.C., March 16-18, 1987.

Wetzel, R.S., D.H. Davidson, C.M. Durst, and D.J. Sarno. 1986. Field Demonstration of In Situ Biological Treatment of Contaminated Groundwater and Soils. Proceedings of the 12th Annual Research Symposium on Land Disposal, Remedial Action, Incineration, and Treatment of Hazardous Waste. USEPA Hazardous Waste Engineering Research Laboratory, Cincinnati, Ohio, April 21-23, 1986.

Durst, C.M. 1986. Removal of Silver and Mercury from COD Waste Solutions. Thesis. Department of Civil Engineering, Virginia Polytechnic Institute and State University.

Wetzel, R.S., C.M. Durst, D.J. Sarno, P.A. Spooner, S.C. James, and E. Heyse. 1985. Demonstration of In Situ Biological Degradation of Contaminated Groundwater and Soils. Proceedings of the 6th National Conference on Management of Uncontrolled Hazardous Waste Sites. Hazardous Materials Control Research Institute, Washington, D.C., November 4-6, 1985.

Durst, C.M., and W.R. Knocke. 1985. Removal of Silver from COD Waste Solutions. Proceedings of the 17th Mid-Atlantic Industrial Waste Conference. Lehigh University, June 23-25, 1985.

Verified for accuracy by: Connie Durst Samson Date: 01-26-89
Connie Durst Samson

SAIC
An Employee-Owned Company

EDUCATION

San Diego State University, B.S. Geology with emphasis in geophysics (1986)

SUMMARY OF EXPERIENCE

Mr. VanWinkle is a geophysist/geologist with SAIC's Environmental Technology Group. Mr. VanWinkle's experience in hazardous waste site investigations includes: site operations manager, geophysical survey investigations and data reduction and evaluation and collection of geologic and hydrologic data.

EMPLOYMENT HISTORY

Mr. VanWinkle is currently acting as the field supervisor at the Parson's Casket Hardware Remedial Investigation/Feasibility Study (RI/FS) for the Illinois EPA (IEPA). He is responsible for oversight of all drilling operations, sample collection, sample management, (using CLP protocols), and on-site health and safety.

Mr. VanWinkle has served as the site operations manager for the Peterson AFB RI/FS Stage 1. He was responsible for overseeing all preliminary site investigations such as soil-gas and geophysical surveys, and interpretation of preliminary surveys to develop drilling and sampling programs. He was also responsible for all drilling operations; sampling and sample management, on-site hydrologic and geologic data collection and interpretation; on-site health an safety; on-site client relations; and final report preparation for the Peterson AFB RI/FS Stage 1.

Mr. VanWinkle has served as the project geophysicist on the Dover AFB RI/FS and the Peterson AFB RI/FS responsible for data collection, data reduction and interpretation, and final report preparation of data.

Mr. VanWinkle helped with the final report presentation and data interpretation of geophysical data collected during the Stringfellow RI/FS in Riverside, CA. He was also involved as a rig geologist in overseeing drilling operations; collection and interpretation of geologic samples; sample management and sample transfer, well installation and development; groundwater sampling; in-situ field measurements; low-volume and high-volume air sampling; and data compilation and interpretation.

Verified for Accuracy by: [signature] Date Prepared: 7-10-89

SAIC

Mr. VanWinkle has served as a rig geologist overseeing drilling operations; collection and interpretation of geologic samples; hydrologic data collection and interpretation, in-situ field measurements; sample collections management, and transfer; well installation and development; data compilation and interpretation; and final report preparation for several Air Force Base Installation and Restoration Programs (IRP) including: George AFB, Eielson AFB, Lowry AFB, and Dover AFB.

Mr. VanWinkle has also served as a project scientist for the CSDOC (County Sanitation Districts of Orange County) 301(h) ocean monitoring program. His duties included sediment, water, and tissue sampling with added responsibilities of determining proper sampling depths from in-situ measurements of outfall plumes, sample storage and transfer, and data base management and compilation.

Mr. VanWinkle served as an assistant inorganic chemist at SAIC's La Jolla laboratory. His responsibilities included analysis of samples by atomic absorption and colormetric methods, and determination of physical parameters such as total suspended solids, total dissolved solids, alkalinity, soil pH and specific conductance. He was also responsible for data reduction, quality assurance/quality control (QA/QC), and final report presentation.

AWARDS AND MEMBERSHIPS

Certified for OSHA requirement of 40 hours training in hazardous waste operations (NUS Corp.)
Associate Member of the Society of Exploration Geophysicists (SEG)
Member of the Southern California Environmental Chemists Society
Member National Water Well Association (NWWA)

ARTICLES, PRESENTATIONS, PUBLICATIONS AND REPORTS

Senior Thesis (1986): An Interpretation of Six Geophysical Techniques to Produce a Geologic Picture of the Eastern Espanola Basin.
Presentation to the Association of North Bay Scientists (1980): An analysis of Common Bottled Waters.

Verified for Accuracy by: Derral D. VanWinkle Date Prepared: 7-10-89

FREDERIC A. ZAFRAN

EDUCATION

Drexel University, M.S., Environmental Science (1979)
Michigan State University, B.S. Zoology (1973)
Temple University, Additional graduate studies in Biochemistry and Physiology (1973)

SUMMARY OF EXPERIENCE

Mr. Zafran is a Senior Environmental Scientist and Project Manager with 12 years professional experience in environmental and health sciences. His primary expertise is the assessment of impacts of toxic substances and hazardous waste on environmental and biological systems. Mr. Zafran is the principal scientist at SAIC responsible for conducting public health risk assessments of hazardous waste sites and facilities. He has experience in conducting these evaluations at Superfund sites, RCRA facilities, DOD and DOE waste sites, and laboratory and industrial facilities. Mr. Zafran's background encompasses work in toxicology, environmental chemistry, ecology, and computer science as well as environmental planning and management. He has a working knowledge of key environmental legislation including CERCLA/SARA, RCRA, CWA, SDWA, and TSCA, and has assisted in regulatory review of Federal and state programs.

EXPERIENCE

1979 - Present: Science Applications International Corporation (SAIC)

Mr. Zafran has been involved extensively in hazardous waste site evaluation and has experience in all phases of the Remedial Investigation/Feasibility Study (RI/FS) process including: (1) preliminary assessment, site investigation (PA/SI) and HRS scoring; (2) identification and examination of potentially applicable or relevant and appropriate requirements (ARAR); (3) baseline public health risk assessment (RI); (4) risk assessment in support of the evaluation and selection of remedial alternatives (FS); (5) derivation of action (i.e., target cleanup) levels for contaminants in all environmental media and (6) risk communication to government officials, private sector clients, and the general public.

Mr. Zafran is currently providing senior technical support to EPA in public health and environmental risk analysis on the Agency's Technical Enforcement Support (TES) contract. He is presently evaluating the human health and biota Endangerment Assessments prepared for the Rocky Mountain Arsenal Offpost Operable Unit (Denver, Colorado), and is contributing to the Feasibility Study for the CPS/Madison NPL site located in the State of New Jersey. In addition

Verified for accuracy by: Frederic A Zafran Date: 5/17/89

SAIC

to this work, Mr. Zafran is conducting or contributing to risk assessments for the following sites and facilities:

- DOD Facilities/Air National Guard Bases: Buckley ANGB, Dover AFB, Eielson AFB, Hill AFB, Joe Foss Field ANGB, Lowry AFB, McEntire ANGB, Niagara AFB, and Peterson AFB.
- Stringfellow Hazardous Waste disposal site (NPL site).
- Commercial RCRA facility in the midwest United States.

Mr. Zafran recently completed the preliminary development of a computer-based methodology for derivation of risk-based target cleanup levels for radionuclides and nonradioactive contaminants in soils and groundwater. This work was conducted in support of remediation efforts at a mixed waste site at the DOE Idaho National Engineering Laboratory. An integrated, modular spreadsheet design was used to link exposure assumptions, toxicity measures, target risk levels and remediation goals. The design of the software affords maximum flexibility to conduct sensitivity analysis, and to balance compliance with ARARs and overall protection, with the need to select a technically feasible, cost-effective remedial alternative.

Mr. Zafran is also providing assistance to DOE and E.I. du Pont de Nemours at the Savannah River Plant (SRP) in Aiken, S.C. He recently prepared a technical briefing paper reviewing and evaluating methods for risk assessment of short-term exposure to nonradioactive carcinogens that may be of potential concern at SRP. Mr. Zafran was SAIC/ETG Project Manager on the same contract for du Pont and DOE, providing support in evaluating the extent of waste site contamination at SRP, and in identifying and selecting remedial action alternatives. He was responsible for the following assessments: (1) selection of indicator contaminants for 26 waste sites; (2) development and application of methods for characterizing long-term risks to human health for nonradioactive contaminants; (3) methods development for public health risk assessment (acute toxicity) of transportation and waste site closure accidents; and (4) review of transport models for ecosystem impact assessment.

Also for DOE, Mr. Zafran conducted preliminary evaluations for dozens of waste sites at the Hanford DOE Facility in Washington state. The objective of these assessments was to identify sites that required corrective action under RCRA or remediation under CERCLA.

Mr. Zafran has provided senior technical support in risk assessment on numerous other projects. These include:

- Assistance to the EPA Office of Air Quality Planning and Standards. Mr. Zafran provided expert review of protocols for public health risk assessment of emissions from aluminum smelting.

Verified for accuracy by: Frederic A Zafran Date: 5/17/89

SAIC

- Expert review of risk assessments prepared by other contractors, that were developed to support selection of RCRA facility corrective actions.

- An assessment of potential long- and short-term risks to human health of release of chemicals from the proposed EPA Full Containment Hazardous Waste Research Facility in Cincinnati, Ohio. Mr. Zafran designed the risk assessment study, and evaluated hypothetical impacts associated with day-to-day operations at the laboratory, as well as catastrophic release scenarios (i.e., explosion).

- Assistance to the Chemical Manufacturers Association in developing an Air Toxics Information Manual for member industries. Mr. Zafran provided guidance in use of air transport modeling and in evaluating potential impacts to human health of long-term, low-level release of chemicals form industrial facilities.

- Support to the EPA Office of Policy Analysis in evaluating the comparative risks to human health of sources of ground-water contamination.

- Assistance to the EPA Office of Toxic Substances in evaluating testing need for priority substances designated under section 110 of SARA (ATSDR Toxicological Profiles).

Mr. Zafran was Project Manager on two multi-year task-order contracts for EPA Headquarters. Mr. Zafran and a team of scientists supported the EPA Carcinogen Assessment Group in conducting toxicological evaluations, quantitative risk assessments, and pharmacokinetic modeling of carcinogenic compounds and their metabolites. For the EPA Office of Drinking Water, Mr. Zafran and his staff developed national occurrence and exposure estimates of chemicals in public drinking water systems. This work supports EPA ODW in the development of drinking water MCLs.

Mr. Zafran managed two Work Assignments for the EPA Region V Great Lakes National Program Office. He was responsible for the preparation of Remedial Action Plans for Deer Lake and Torch Lake in Michigan. In these two assignments, SAIC evaluated environmental conditions in the river and lake systems and developed a systematic and comprehensive approach to restoring beneficial uses. Also for EPA Region V, Mr. Zafran assisted in the development of a water quality management plan for the Grand Calumet River/Indiana Harbor Canal. He conducted a critical evaluation of the state's water quality criteria and standards program, developed a method for evaluating the existing sediment contamination problem, and used this method to identify and rank sediment contaminants of concern to aquatic life and human health.

Mr. Zafran has assisted the EPA Office of Solid Waste (OSW) in reviewing applications submitted by industry for RCRA Part B permits. He has reviewed

Verified for accuracy by: Frederic A Zafran Date: 5/17/89

numerous delisting petitions for exclusion of waste generated at specific facilities, from listing under RCRA a hazardous waste. Also for OSW, Mr. Zafran assisted in evaluating the Vertical Horizontal Spread (VHS) groundwater transport model proposed by EPA for use in predicting levels of contaminants at receptor wells. In addition to evaluating the appropriateness of the model for its intended use, Mr. Zafran proposed a method for estimating concentration of organic compounds in leachate from land-farmed waste, or waste disposed in landfills. The approach involved predicting the equilibrium partitioning of contaminants between aqueous and solid phases of soil-water systems.

As Work Assignment Manager on the Water Quality Based Program Contract for the EPA Office of Water Regulations and Standards, Mr. Zafran was responsible for: (1) developing hazard assessments (aquatic ecological effects and mammalian/human health effects) for 20 nonpriority pollutants found to be incompatible with the workings of POTWs; and (2) preparing a background and review document on methods for the derivation of sediment criteria and their application under CWA, MPRSA, RCRA, and CERCLA. Mr. Zafran was also technical contributor to an Environmental Impact Statement on the disposal of coal ash in the waters of the New York Bight. He evaluated the toxic impact to marine species associated with direct exposure to waste ash or contaminants released therefrom, and the potential for effects on human health and welfare.

Mr. Zafran conducted a study of the impact of coal liquefaction and shale oil products on aquatic systems. This work for the Office of Toxic Substances involved the assessment of the toxicity of compounds characteristic of synfuels that are responsible for major environmental effects: polycyclic aromatic hydrocarbons, polynuclear heterocyclic and aromatic bases, water soluble aliphatic and aromatic hydrocarbons, and trace metals.

Mr. Zafran contributed to the development of a field guide for EPA and the Coast Guard, on responding to the spill of sinking chemicals in aquatic systems. On this effort, Mr. Zafran outlined methods for characterizing discharged materials, the extent of contaminant transport, the potential for environmental impacts, the need for emergency response, and identifying response objectives.

For the EPA Office of Analysis and Evaluation, Mr. Zafran conducted a study of environmental quality problems of the Narragansett Bay estuary. This included the physical/chemical characterization of the estuarine system, and examination of uses of the Bay and an evaluation of water quality problems, wetland loss, and shoreline erosion. Also for this office, Mr. Zafran assisted in developing a five-year estuarine quality and protection program plan. He identified and evaluated research needs in the following six areas: estuarine characterization site-specific criteria development, use attainability analyses, wasteload allocation techniques, monitoring, and benefit-cost assessment.

Verified for accuracy by: Jadwiga A. Zafran Date: 5/17/89

SAIC

Mr. Zafran was Work Assignment Manager on a project for the EPA Office of Federal Activities to assess the extent to which the 404 Program assesses and supports research essential to the protection of sensitive aquatic resources. Analysis of existing research and future needs facilitated the development of a broad-based program plan for 404-related research activities.

Mr. Zafran conducted a preliminary study of the impacts of incineration of sewage sludge on human health and the environment. Specifically, he provided the EPA Sludge Task Force with an assessment of contaminants likely to be emitted to the atmosphere, a quantification of emissions factors, and an identification of pollutants of major concern. For the Office of Technology Assessment, Mr. Zafran prepared a comparative overview of ocean disposal of sewage sludge and disposal in terrestrial environments.

Mr. Zafran has contributed to the development of regulatory support documents for Toxic Substances Control Act Section 4, priority chemicals (OPTS). He was responsible for the analysis of information on pollutant emission, environmental transport, and transformation as it relates to occupational and general population exposures. Also for OPTS, Mr. Zafran has prepared numerous Chemical Hazard Information Profiles, providing background health and exposure data in support of risk assessment and test rules development processes.

1974 to 1976: Krusen Center for Biomedical Research and Engineering

Prior to working for SAIC and before returning to graduate school, Mr. Zafran was employed by the Krusen Center for Biomedical Research and Engineering. At the Krusen Center, Mr. Zafran was a research assistant involved in the study of neuromuscular function in human locomotion. While in graduate school, Mr. Zafran worked as consultant (health systems planner) to the Pennsylvania Department of Health, representing the Drexel University Environmental Studies Institute.

PROFESSIONAL AFFILIATION

Society for Risk Analysis

Verified for accuracy by: Frederic A Zafran Date: 5/17/89

SAIC
An Employee-Owned Company